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WHEN, Sir, you entrusted to me the honourable duty of delivering this annual address, it seemed idle to suppose that I could add to the central theme, which has inspired this occasion now for more than 250 years, anything that had not been said by one or other of the long line of my predecessors in the post. But when I came to examine some of the outstanding accounts of the history of the discovery of the circulation I could not but feel that the fuller knowledge we now possess of the writings of the men of science of ancient days demanded a readjustment of traditional beliefs: we have claimed too much for the ardent anatomists of the Renaissance; we have conceded too little to the master minds of antiquity; in particular, I venture to think that the claims of Aristotle have not received their due meed of recognition.

It will be consonant to the directions of Harvey's testament that I should testify to-day how great a part of our present-day knowledge of the scientific works of Aristotle is due to a late Fellow of this College, and that I should commemorate him by name. I refer, of course, to the late Dr. William Ogle. His translation of the treatise, "On the Parts of Animals," with commentary and copious annotation, was first published in 1882, and rewritten with diligent revision in 1911, when the hand of death was hard upon him. I had the privilege of discussing with him many points of his work, and I desire therefore that he, being dead, may yet speak to you through the medium of my lips. In 1897 this first essay was followed by a second dealing in similar manner with the conjoint treatises on Youth and Old Age, Life and Death, and on Respiration. Every page of these volumes is instinct with refined scholarship linked to a wide knowledge of biology. If there be any here who meditate a like venture into the by-ways of ancient science, I cannot do better than adopt the words of the great man we commemorate to-day, and exhort them to imitate this benefactor, and contribute their endeavours for the advancement of this society according to the example of this deceased benefactor. These volumes will survive as memorials of an age of British medicine in which Science and Literature walked hand in hand, side by side with a few more, of which it is meet that on this occasion I should name those monumental volumes in which you, Mr. President, have enshrined the life-history of that great seat of medical learning which bears the name of Harvey on its roll of honour.

It has been alleged, in reproach of Harvey, that he withheld due recognition of the contributions of his immediate predecessors to the subject matter of his discovery. It is no part of my thesis to represent Harvey as immune to human frailty: the blind eye he turned to Aselli's demonstration of the lacteals and their function forbids this. But in the matter of the circulation of the blood it is permissible to say that his indebtedness to any but Aristotle is almost negligible. The starting point and the central theme of the whole of Harvey's exposition is his conception of the heart as a muscular pump forcibly propelling the blood to the furthest limits of the vascular system, and this conception is built directly on Aristotle's doctrine of the primacy of the heart. Harvey's own quantitative estimates of the output of the ventricle at each systole supplied the single other factor that was needed to compel the conclusion that the same blood was passing time after time through the heart in the course of a circular movement. Others had set out detached fragments of the truth, but it is only when these are regarded with twentieth century vision, wise after the event, that they become essential antecedents of the discovery. Harvey is never tired of insisting on his great debt to Aristotle in every branch of his researches; he quotes him far oftener than any other writer, and next to him Galen, largely disregarding the great anatomists of the Renaissance.

There is an interesting parallelism between Aristotle and Harvey in the circumstances of their lives. Each was attached to the Court, and each enjoyed royal patronage of his work. Aristotle's father, Nicomachus, was Court physician to King Amyntas, father of Philip of Macedonia; it was probably from his father that Aristotle imbibed his taste for biology. Philip appointed him tutor to his son, Alexander the Great, and the friendship of tutor and pupil ended only at death; it was Alexander who supplied the money that enabled Aristotle to make important collections of zoological specimens, and also secured him the great variety of animals that he dissected. The Macedonian kings were no undiscriminating patrons of medical science, for both Philip and Alexander on occasion summarily put to death Court physicians who were convicted by the event of ineffectual therapeutics. Harvey likewise, as is generally known, was attached to the Court of Charles I, and acted as mentor to his sons. It was the same king that supplied Harvey from the royal herd with the does which played so useful a part in his embryological investigations. Charles's interest in Harvey's work was direct and personal; he showed keen interest in Harvey's demonstration of the *punctum saliens*, the first rudiment of the fetal heart; he was not satisfied till Harvey had repeated in his presence the experiments by which he proved the circulation of the blood, in a very different spirit from that of Louis Quatorze, who used them to afford a fresh sensation to the jaded minds of himself and his courtiers; and everyone knows the tale of King Charles inspecting and fingering the exposed heart of Harvey's patient, the son of the Lord Montgomery, and detecting its insensitiveness. For his enlightened patronage of Science, and much more so of Art, the Stuart monarch deserves the tribute of kindly reminiscence.

Aristotle, whose life extended from 384–321 B.C., was the first worker to present anything in the nature of a coherent account of the vascular system, and of the purpose it was designed to serve in the animal economy. This alone was a remarkable achievement, when we reflect that prior to him, with insignificant exceptions, the whole corpus of anatomy consisted of crude observations of some of the principal organs, gleaned from the hasty inspection of the slaughtered bodies of sacrificial animals. In assessing Aristotle's knowledge of anatomy, we must not forget that the treatises specially devoted to anatomy are lost; what a treasure trove for some future archæologist! Aristotle himself tells us that they were illustrated by drawings, and if these were drawn, as seems probable, from actual dissections, and were not mere fanciful representations, they will have antedated by some 1,800 years any subsequent similar attempt. In the absence of these treatises we are dependent in the main on such anatomical details as can be derived from his treatises on "The History of Animals" and "The Parts of Animals."

What facilities were available to Aristotle for his researches? For human anatomy none, for Greek religious feeling was wholly repugnant to the desecration of the tabernacle in which the human soul found earthly tenement. All his dissections were carried out on the bodies of animals so varied in character that he may justly be designated the Father of Comparative Anatomy. In so far as he was an anatomist, Aristotle's feet were set on firm ground to the extent that the general plan of human and animal structure is interchangeable; in so far as he was a physiologist, his feet were still embedded in the shifting sands of speculation inherited from the early Greek physical philosophers. But even here his eyes were set towards the dawn, for he did at least test the abstract speculations of philosophers by the touchstone of anatomical structure. He saw that the endeavour to explain bodily function without a knowledge of bodily structure was an idle quest, and it was in this faith that he laid well and true the foundations of descriptive anatomy, which awaited elevation to the dignity of a science at the hands of Vesalius in his *Fabrica Humani Corporis*. So with Aristotle hypothesis began to give place to understanding. Had he but realized the necessity of testing by means of experiment the inferences drawn from observation, as Galen did, he might have been acclaimed the

Father of Physiology as well. Fidelity to the principles he professed saved him from the glaring and gratuitous fallacies, such as the presence of air in the arteries, the origin of the veins in the liver, and the existence of pores in the septum, with which his successors, Erasistratus and Galen, obstructed the elucidation of the circulatory system, and therewith the birth of modern physiology.

The problem that confronted Aristotle was a far wider one than that of which Harvey furnished the solution. The chapter of accidents that constitutes human existence was proof positive of some intimate relation between the life of a man and the blood that coursed in his vessels. When Cain shed Abel's blood upon the ground he established the axiom of primitive physiology that the blood is the life; it was manifest that warmth was inherent in the living human body, and that when warmth left the body life departed also; and that in some way or other life was dependent on the food we consume and the air we breathe. The task Aristotle set himself to accomplish was the blending of these elemental principles into a rational system of physiology, and one compatible with the anatomy of the vascular system as he knew it. Harvey was well aware that his great discovery touched only the fringe of this wider problem, for in his *De Motu Cordis* he made promise of further treatises on Nutrition and Respiration, neither of which was destined to see the light. Rightly, too, Harvey described his exposition as an anatomical exercise, and expressly stated that the question of the purpose of the circulation of the blood stood over for future consideration. The history of the discovery is like some great picture puzzle; Aristotle, with rare skill, figured out large but detached fragments of the picture, but left it incomplete; interested onlookers—Erasistratus, Galen, Stephanus, Columbus, Fabricius—picked up stray pieces, now one and now another, and laid them in their places; Harvey, by a splendid effort of genius and industry, mapped out the central theme of the puzzle, thereby supplying the key to the completion of the pattern; it was left to Aselli, who discovered the lacteals and so guided Pecquet to the discovery of the thoracic duct, and to the long line of physiologists, mainly British, who worked out in detail the physiology of respiration, to fill in the uncompleted picture.

Some outline sketch of the knowledge of the anatomy of the heart and blood vessels, derived by Aristotle from his dissections, is a necessary prelude to any attempt to appraise his value as a physiologist. But for the omission of the valves, Aristotle's description of the structure of the heart is reasonably correct. He describes the membrane around the heart, which we call the pericardium, and states that the mammalian heart has three chambers. There can be little doubt that he indicates the right and left ventricles and the left auricle, for such details as he gives harmonize with no other identification. This is the view expressed by Harvey in his *Praelectiones*, but in the *De Motu Cordis*, following Columbus and Cesalpinus, he puts forward the suggestion that Aristotle may have regarded the left ventricle as divided into two parts by the mitral valve. Right down to Harvey's time it was customary to speak of the ventricles only as "the heart"; the auricles were regarded merely as convenient antechambers. Aristotle, however, seems to have regarded the left auricle as part and parcel of the heart. On the other hand, he looked upon the right auricle as merely the meeting place of the two venae cavae, and termed the three together the "Great Vessel." His conception of the essential continuity of the three parts of the great vessel will be best understood by opening the thorax of an asphyxiated animal, when the right auricle and the two venae cavae will be seen to stand out replete and turgid with blood in contrast to the rest of the heart and vessels. Aristotle calls the left ventricle the middle chamber, and so, positionally, it is, lying between the right ventricle in front and the left auricle behind. He says that the great vessel is attached to the largest chamber—that is to say, to the right ventricle—and the aorta to the middle chamber or left ventricle. Again, he says that all these chambers are connected with passages leading in the direction of the lung, but that all these communications are indistinctly discernible by reason of their smallness, except one. This last is, of course, the pulmonary artery, and the two others the pulmonary veins and ductus arteriosus, though the latter is not functional normally for more than a few days after birth. Again, he says that the right cavity contains more blood and less pure than the middle and left, and this would be so in the case of a strangled animal, a mode of killing that Aristotle recommends for animals that are to be dissected. Galen scoffs at Aristotle's assertion that the mammalian heart has three chambers: he himself always describes two ventricles, and assigns a very subordinate rôle to the two auricles. In the revival of anatomy, however, Aristotle's view triumphed over that of Galen, and we find anatomist after anatomist mistaking Aristotle's meaning, and insisting on the existence of a third ventricle, in verbal agreement with Aristotle. To effect this it was necessary to conceive the ventricular septum to be a porous spongy structure, comparable to a ventricle, formed for the elaboration of the blood in its supposed passage from the right to the left side of the heart. This was the third ventricle of Mondino, Manfredi, Leonardo da Vinci, and others, which only disappeared from textbooks of anatomy when Vesalius, following, as some will have it, the lead of Servetus, boldly declared that the septum was solid and its porosity a myth.

Aristotle felt that some explanation was necessary of the thickness of the walls of the heart, for he had no idea of the nature of muscular contraction and the energy produced in the process; he had no doubt that its purpose was to protect the innate heat which, we shall see, he conceived to reside in the heart.

Aristotle says that the chief blood vessels are two in number, because every animal is bilateral; each arises from the heart, and all other vessels are branches of these, and carry nutritive blood to every part of the body. These two chief vessels are the great vessel, already described, which is the source of all the veins, and the aorta, which is the source of all the arteries. Aristotle appears to be the first to restrict the name "aorta" to this vessel, which Diocles had called the "thick artery." Aristotle held that the blood, when endued with heat from the heart, was carried by both arteries and veins from the heart, not propelled, however, by any output of cardiac energy, to do its work in the distant parts of the body. In essence, the discovery of the circulation of the blood by Harvey consisted of a modification of this idea, whereby the blood left the heart by the arteries and returned to it by the veins.

Though Aristotle gives no specific names to either pulmonary artery or pulmonary vein, he describes them both; the former he regards as the great vessel continued back through the right ventricle, and the latter as the aorta continued back through the left ventricle. This conception is the necessary consequence of his assertion that the chief blood vessels are two, and that all others are branches of these. It is also a reason why he gives no names to so many of the vessels he describes, because he considers them merely branches of the two to which he has assigned names; we can only identify them, as a rule, by the organ to which he accredits them. One may accurately liken the Aristotelian heart to two Higginson's syringes, with their bulbs in intimate apposition, side by side. The long tube of the one is the great vessel and its short tube the pulmonary artery; the long tube of the other is the aorta and the short tube the pulmonary vein. Between the two collateral systems there exists no communication whatever.

In his *De Partibus Animalium*, Aristotle roughly sketches the superior vena cava as passing up towards the brain, and terminating in branches in its membranes. He regards it merely as an upward extension of the great vessel. But in the *Historia Animalium* he gives a much fuller, and reasonably correct, description of its innominate and jugular tributaries. Similarly he describes the aorta as terminating in its upward extension in branches supplying the membranes of the brain. Though the whole of the anatomy of the vascular system as given by Aristotle is full of interest, despite its inaccuracies, it is beside the present purpose to describe the branches he assigns to each of his two chief vessels. It is necessary, however, to give a thought to the breach of continuity which he leaves between the pulmonary arterioles and venules in the lung and the systemic arterioles and venules in the rest of the body, for until these gaps were bridged no demonstration of the circular movement of the blood was possible. Harvey, indeed, did not demonstrate the circulation, for he was in his grave when the movement of the blood through the capillaries was first made visible to human eyes. What he did was to establish by the strongest

experimental evidence the certainty of the movement of the blood in a circle.

Aristotle's description of the anatomical distribution of artery, vein, and bronchus in the lung not only bears witness to the meticulous care of his dissection, but implicitly it formulates the germ of the modern doctrine of respiration, in so far as the air is said to reach the blood through the unbroken walls of blood passages and air passages. "Canals," he says, "lead from the heart into the lung and branch off, just as the windpipe does, running all over the lung parallel with the passages from the windpipe. The canals from the heart are uppermost; there is no actual coalescence of the passages, but by their close contact they receive the air breathed and pass it on to the heart; and one of the passages conveys it to the right chamber of the heart, and the other to the left." The admission of air from the lung to each side of the heart by way of both pulmonary artery and pulmonary veins is a necessary consequence of the complete separation of the two sides of the Aristotelian vascular system. Aristotle has no use for this inspired air beyond the limits of the heart, and returns it to the lung by the self-same channels of entry as soon as it has done its work in the heart. Erasistratus and Galen, however, both retained some part of the air for further use in the body. To appreciate the pulmonary physiology of the ancients it is important to bear in mind that they thought and wrote of the lung as single, if bipartite; not as we do, as double.

As in the pulmonary so in the systemic system Aristotle suggests no communication, direct or indirect, between arteries and veins; he does not even postulate distal anastomoses between them, as his immediate successors do; yet he does vaguely foreshadow the existence of capillary vessels, which were not observed and described till two thousand years later by Malpighi. "As the blood vessels advance," he says, "they become gradually smaller and smaller, until at last their tubes are too fine to admit the blood." And again: "The smallest vessels are converted actually into flesh, though potentially they are no whit less vessels than before. This explains why, so long as the flesh of an animal is in its integrity, blood will flow from any part whatsoever that is cut, though no vessel, however small, be visible in it. Yet there can be no blood unless there be a blood vessel."

For reasons that seemed good to him, and which, viewed by the standard of the knowledge of his time, were by no means unreasonable, Aristotle located the vital principle in the heart. By it the heat, constantly generated in the heart from combustion of food carried to it in the blood, is so vitalized as to afford nutrition and functional activity to the body. Without heat all the functions of the body are in abeyance, and life is impossible. He traces the origin of the blood to the fluid portion of the food absorbed by the blood vessels from the intestine through invisible pores; the fluid passes in the form of an ichor or plasma to the heart. The route by which it passes is the mesenteric vessels, the arteries conveying it to the aorta and left side of the heart, and the veins to the right side of the heart by way of the portal vein and inferior vena cava.

Just as the absence of any communication, direct or indirect, between the two sides of the Aristotelian heart necessitated the admission of air to both sides by pulmonary artery and veins alike, so now food ichor is admitted to both sides of the heart also. The venous channels clearly are the mesenteric tributaries of the portal vein, for Aristotle describes them as spread over the surface of stomach and intestine, like the roots of a plant, a life-like picture of the portal tributaries that will commend itself to every anatomist. The hepatic vein he regards as a continuation of the portal vein, for he speaks of a short and wide branch of the great vessel, or vena cava, that runs through the liver. Under the heating influence of the heart, the ichor is converted into blood, which is the material from which the whole body is made. This same heat induces expansion of the blood in the heart and lifts up its muscular containing wall, and so excites its pulsation. This elaboration of heat within the heart is not only the cause of the heart beat, but is also the cause of the respiratory movements, for heat derived from the heart causes the lung, and with it the thorax, to expand, so that the air rushes in and reduces the heat, whereupon lung and thorax collapse and expire the air. Such is the mechanism of respiration, and its purpose is to temper the heat of the heart, which threatens ever to become excessive; thus is equilibrium of body temperature automatically regulated. The food is the means of maintaining the heat of the heart and the body, and the air inspired is the means of keeping it within physiological limits. Diastole is the expansion of the heart caused by the combustion of food ichor within it, and systole is the subsidence resulting from condensation of the heated blood by the inspiration of cool air. Thus pulsation of the heart is a mere by-product of metabolic changes occurring within its cavities. Diastole and systole do but represent the alternating interplay of thermogenesis and thermolysis, and rhythm is the expression of the regularity of these phenomena. Pulsation is maintained continuously throughout life, because the influx of expansible food ichor into the heart and the ingress of cool air are also continuous.

To modern ears, wise with the wisdom of knowledge revealed, such physiology may seem archaic balderdash; for all that, Harvey, to the end of his days, deviated no more than a hair's breadth from the standpoint of Aristotle. Like him he conceived diastole to be an essential prelude of systole. At the entrance of the vena cava into the right auricle, just, in fact, where Keith and Flack located the sinus node, Harvey conceived a sudden expansion of the inflowing blood to take place, under the influence of its own innate heat, for late in life he transferred the seat of the innate heat from the heart to the blood itself. In his view this sudden expansion of the blood excited expansion of the right auricle in diastole, and diastole was the efficient stimulus of systole, which was no more and no less than a simple muscular contraction. To Aristotle, who knew nothing of the nature of muscular contraction, systole was, as we have seen, a passive subsidence due to condensation of hot blood in the heart by the cool air inspired; Harvey rejected the last vestige of passivity and established systole as the motor power activating the circulation. To Aristotle the heat of the blood in the heart, alternatively increased by consumption of food ichor and decreased by entry of cool inspired air, is the efficient cause of pulsation, to Harvey the innate heat of the blood just before it enters the heart. It is strange that Harvey, who was well aware that the excised heart may maintain its pulsation, and who demonstrated on the exposed heart of the snake the effect of compression of the vena cava in emptying the still pulsating heart, should have adhered to this idea of expansion of the blood, which his own experiments negatived. All men have blind spots in their field of mental vision, and the reasonable remedy would seem to be that research workers should hunt in pairs or in packs.

Following Aristotle, Harvey at first conceived that the purpose of the passage of blood through the lungs is to reduce its heat. Aristotle effected this reduction of heat within the heart; he knew that air was essential to the maintenance of a flame, and he conceived that it acted by cooling the flame, so that it did not burn itself out precipitately; similarly the inspired air hindered the innate heat of the heart from causing its own destruction. Galen accepted Aristotle's teaching thus far, but in addition to its cooling function held that some of the air inspired is retained in the blood, and has important functions to perform in the general economy of the body. Harvey, however, reverted to the simpler teaching of Aristotle, and thereby moved further away from the modern doctrine of respiration. Late in life Harvey rejected the cooling theory as well, and frankly confessed himself at a loss to explain the purpose of respiration. It remained for Borelli, Boyle, Hooke, Lower, Mayow, Black, Priestley, and Lavoisier by successive stages to attain this goal. I commend this list of names to those who have no pride in British achievements in scientific research.

It is matter for surprise that so keenly observant a mind as that of Aristotle should have overlooked the different rate of the pulse beat and respiration, which cuts at the root of his doctrine of the synchronous expansion of heart and lung. On that point his treatise on "Respiration" is silent; but we cannot presume that he tacitly conceived a greater degree or a fuller supply of heat to be necessary to cause expansion of the lung than to cause expansion of the heart, for he makes it clear that in his view subsidence of the heart at each systole depends on the inrush of cool air during inspiration.

To Aristotle, then, the heart is a bellows, not a pump, and diastole is the active phase, not systole. Right down

to Harvey, suction, not propulsion, was regarded as the essential activity of the heart. This necessarily precluded any satisfactory explanation of the arterial pulse, which Aristotle referred to the movements of the blood in the heart transmitted to the blood in the arteries, diastole of the heart synchronizing with diastole of artery. If we would understand his physiology we must purge from our minds any conception of the heart as a muscular organ propelling the blood; we must think of it rather as a laboratory, introduced into the vascular system, within which food and air play their respective parts in maintaining the vital heat in such a state of stable equilibrium as is most suitable to the requirements of the body.

Such, then, were the foundations in anatomy and physiology on which rested the Aristotelian doctrine of the primacy of the heart. Its dominating position, too, in the centre and forefront of the body seemed to mark it out as its acropolis, and his observations of the developing embryo assured him that it was the first organ to be formed, preceding even the appearance of the blood. In his earlier work Harvey followed obediently the lead of Aristotle, but in his later years transferred both the primacy and the seat of innate heat from the heart to the blood. This doctrine had found favour in Greece before the time of Aristotle, but he himself expressly repudiates it, for his observations seemed to show beyond question that the heart was the first part to live and the last to die. Indications are not wanting that even in his early years Harvey halted between the heart and the blood, and it was Aristotle's dictum that inclined him to declare for the heart; but his bosom's lord sat lightly in his throne, till his own researches in embryology and his own observations of the dying heart led to its ultimate dethronement in favour of the blood. Harvey fancied that he had perceived a residual flicker of movement in the blood after the substance of the heart was dead; had he referred this movement to its real cause he would never have strayed from the Aristotelian fold.

The primacy of the heart among the organs of the body was of first importance as the starting point for a rational explanation of the circulatory system, for it established the position of the heart as the source of the blood vessels. Before Aristotle the Hippocratic school had asserted their origin in the head, and Galen's first master, Pelops, sustained this belief. It was a sad falling away from the standpoint of Aristotle when Erasistratus and Galen referred the origin of the veins to the liver.

Aristotle had no notion of the movement of the blood in a circle, though he believed that it supplied nutriment to every part of the body. Following the lead of Plato, he looked on the vascular system as an irrigation supply, and compared it to "watercourses in gardens, so constructed as to distribute water from one single source or fount into numerous channels, which divide and subdivide, so as to convey it to all parts." He conceived the main flow of blood to be from heart to blood vessels, and so to all parts of the body, where much of it was used up; but he admits flow in the opposite direction also, for he says that the heart receives blood both from the great vessel and the aorta; what was used up at the far end of the blood vessels in the needs of the body was restored to the heart by the food ichor conveyed to it. The continuous supply of ichor, derived from the intestine, to the heart would seem to demand a continuous current in mesenteric veins and arteries towards the heart; on the other hand, the needs of nutrition postulated a current in the opposite direction from the heart towards the stomach and intestine. So keen a mind as Aristotle's must have envisaged this contradiction, and one can only imagine that he conceived something in the nature of a general diffusion to take place. Galen faced the difficulty squarely, and cited as a parallel occurrence the flow of bile in opposite directions in the cystic duct. Harvey, who still, however, in spite of Aselli's demonstration of the lacteals, believed in absorption of chyle by the portal radicles, triumphantly removed the difficulty by showing that the blood left the heart by one set of vessels and returned to it by the other.

At times Aristotle lends himself to the belief of an alternating flux and reflux in the blood vessels, in accordance with the teaching of Empedocles, who two centuries before him had laid it down that "it is the nature of blood to move backwards and forwards." Aristotle compares the blood flow to the current in the strait of Euripus, which sets once a day in each direction; the ebb and flow of the tide is translated from the macrocosm to the human microcosm. He gives us no idea of what he conceived to be the motive force, but was satisfied with the fact that such a to and fro current did demonstrably occur in nature within his own experience. These more extensive movements of the blood must not be confounded with the local movements induced by diastole of the heart and its ensuing systole; they are smaller movements, as it were, within these larger movements.

To us who know that, under the impetus of the ventricular systole, blood flows from where the pressure is high to where the pressure is low, the conception may seem puerile; but in the absence of that knowledge and in the presence of spontaneous movements in the arteries, which seemed for all the world like the progress of a tidal wave, it was not unnatural to conclude that the movement was of the same nature as the ebb and flow of the tide. In our evaluation of the scientific ideas of antiquity we must beware of confusing ignorance—which is the common lot of mortals—with stupidity, which Nature, in regard for human progress, has wisely distributed on a basis of selection. It is as difficult to assume the mental attitude of two thousand years ago as it is easy to relapse into one that is twenty years behind the time. To men who had been accustomed to regard the tissues as lapping leisurely at the nutrient blood, the very idea of the rapid movement of the blood in a circle would have seemed as irrational as the antics of a puppy dog in hot pursuit of its own tail round a flower bed. Just as it was incomprehensible to Aristotle so it was unintelligible to Harvey, even when he had established its existence. So imbued was Harvey's mind with the thoughts of his predecessors in antiquity, that the very rapidity of the circulation convinced him that its purpose could not be the nourishment of the tissues.

Aristotle was aware that the blood differed on the two sides of the vascular system, but he had no notion of the cause of the difference; naturally, therefore, he concluded that there were two kinds of blood. He describes the blood on the right side as more abundant, less pure, and denser than on the left. No doubt he derived this belief from finding the venous side of the circulation charged with dark blood in the bodies of the strangled animals that he dissected. His belief in the complete separation of the two sides of the vascular system precluded any idea of the difference being due to the action of inspired air on the blood, for it compelled him to admit air to both sides of the heart by pulmonary artery and vein alike. The cause of the change was not known till after Harvey's time; indeed, the difference of the blood on the two sides of the circulation was used as an argument against Harvey's doctrine of a rapid circular movement, for it seemed incredible that the same blood should be constantly changing from one state to the other.

Passing from Aristotle to Erasistratus, we quit the clear crisp air of Hellas, that lent to Hellenic thought full measure of its own clarity, for the heavy exotic atmosphere of Lower Egypt, in which men seemed to see the truth as it were through a glass darkly.

In Erasistratus is focussed the contribution of the great Alexandrian school to the knowledge of the vascular system. His lifetime is vaguely assigned to the eighty-five years between 330 and 245 B.C. Born on the island of Ceos, it is uncertain where he received his medical education, but probably most of his anatomical work was carried out at Alexandria, for there alone existed facilities for the dissection of the human subject such as his knowledge attests; there he must have imbibed to the full the scientific teaching of Aristotle. Celsus and Tertullian have branded him as a dissector of living criminals, and Galen has fallen under the same imputation, though his dissections were almost, if not entirely, confined to animals. Even in Alexandria Greek religious sentiment retained its repugnance to human anatomy, so that the practice soon died out, even in the place of its first flourishing. If Erasistratus had ever dissected a criminal alive it is difficult to believe that he would have described the arteries as containing only air.

The only real contribution of Erasistratus to the anatomy of the vascular system is his description of the auriculo-ventricular valves of the heart and chordae tendineae; the semilunar valves had been already described in the "De Corde" of the Hippocratic Corpus. Erasistratus also

pointed out the mode of closure of the valves and its purpose; but so wedded was he to belief in flux and reflux of the blood stream that he is constantly compelled to ignore their competence. Unlike Aristotle, he believed the whole of the food to be absorbed from the intestine by the portal vein, which carried it to the liver for conversion into blood. He stood on the brink of a great discovery, for he described the lacteals in sucking kids, but believed them to be mesenteric arteries.

It is well-nigh impossible to gather together a complete account of the teaching of Erasistratus, for knowledge of his work is derived almost entirely from excerpts of Galen and other authors, so that lacunae are inevitable, but clearly he regarded the liver as the starting point of the blood stream. From the liver the blood pursued in the main the route of the venae cavae and their tributaries to the most distant parts of the body, but in its course a portion passed on into the right ventricle, and thence, by the harmonious co-operation of tricuspid and pulmonary valves, was guided to the lung. Flux and reflux in venae cavae and their branches, flux and reflux between right ventricle and lung—that was his conception of the distribution of the blood; a distribution, too, confined exclusively to the veins. Side by side with this sanguineous circulation in the right side of the heart and veins is a circulation of spiritualized air or pneuma in the left side of the heart and arteries. The mistake of Erasistratus in making the arteries carriers only of air—a mistake which he is said to have inherited from Praxagoras of Cos—was the outcome of a correct observation incorrectly interpreted. Just as Aristotle had been impressed by the fullness of the veins after death by asphyxia, so Erasistratus was impressed by the emptiness of the arteries, and he seemed to find confirmation of his belief in the close anatomical relationship of the bronchi and branches of the pulmonary vein, from which he inferred that they were in actual open communication. Erasistratus discarded the Aristotelian belief in the cooling function of respiration, and propagated one more in harmony with modern physiology, that the inspired air is, in part, retained and has important duties to perform in the most distant parts of the body. This would have been a notable advance, but for his absurd separation of the blood and the air in veins and arteries respectively. Most of the air, or pneuma, drawn in in inspiration through the trachea passes from the extremities of the bronchi in the lungs by direct communications into the pulmonary veins, whence it reaches the left ventricle, and is distributed by the aorta and its branches, the arteries or air-carriers, to all parts of the body. The simple primitive pneuma (*πνεῦμα ζωτικόν*, or vital spirit) animates all vital processes throughout the body, but in the process of respiration it undergoes also in the left ventricle a peculiar refining, with formation of soul pneuma (*πνεῦμα ψυχικόν*, or animal spirit), which is carried in the arteries to the brain, and there, by the agency of the emergent nerves, produces motion and sensation. To Erasistratus the purpose of respiration is the spiritualizing of the pneuma and its carriage into the arteries; the pulsation of the heart is due to expansion of the pneuma in presence of the innate heat of the heart, on the principle of an internal combustion engine. Like Aristotle, he had failed to detect the different rate of respiration and the pulse. The surplus air is returned from the lung and discharged by the mouth and nostrils. Erasistratus attributed different properties to blood and pneuma; blood is the prime constituent of the organs and sustains the simple vegetative processes of living bodies, but all the higher functions depend on the activity of pneuma.

So much for the vascular anatomy of Erasistratus, but Erasistratus the anatomist finds himself in conflict with Erasistratus the surgeon, whose experience has taught him that when an artery is severed blood flows from the wounded artery. To meet this discrepancy the anatomy of the body calls for revision, so the terminations of the arteries are made to anastomose with the terminations of the veins by little communications which under normal conditions are closed, but in the case of a wound of the artery become open. This he attributes to the escape of pneuma or air from the arteries, whereupon, in abhorrence of a vacuum, blood passes over from veins to arteries and streams out of the wound. His suggestion of anastomoses between veins and arteries is not prompted by observation or experiment, but by the necessity of bolstering up an indefensible theory. It is matter for regret that the exotic term "pneuma" should have been adopted into English diction, for it represents primarily simply the inspired air. Viewed thus the physiology of Erasistratus is simplicity itself; the air we breathe passes directly from the bronchi by the pulmonary veins into the left ventricle; there it undergoes some subtle refinement before it is distributed by the arteries to all parts of the body, enduing them with function, just as the blood affords them life and the faculty of growth.

After Erasistratus, Galen. His anatomy was based almost exclusively on dissection of animals, living or dead. On rare occasions he had the good fortune of a hasty inspection of a human body, some dead highwayman, some victim of the arena, some decomposing body washed up on the river bank. In Alexandria the human skeleton was set up for demonstration, and disused burial grounds yielded up their bones to him, as they did to Vesalius. Like Harvey, Galen had on one occasion the opportunity of watching the movements of the heart in a living boy, who as the result of an accident had his heart exposed to view.

We shall understand Galen best if we think of him as a medical encyclopaedist bent on gathering up into one all-embracing system all the lore of all his scientific predecessors: the Hippocratic school, Aristotle, and Erasistratus meet and blend in him. He likened the portal vein and its tributaries to the roots of a tree, of which the inferior vena cava is the trunk and the systemic veins the branches. Just as the roots of a plant attract nourishment from the soil, so the roots of the portal vein attract food chyme from the intestine and stomach, and conduct it to the liver, whence it passes to the right side of the heart. But in the liver the chyme is transformed into blood, and endowed with natural spirit (*πνεῦμα φυσικόν*); this low-grade blood is only adequate for *nutrition*, and the veins are the channels by which it reaches its destination. The blood from the liver, as soon as it reaches the inferior vena cava, divides into an upward and a downward stream; the latter passes by the descending part of the cava and its branches to the lower part of the body; the former passes up to the right auricle and there divides into two, part continuing its upward course by the superior vena cava to the upper part of the body and head, and part passing into the right ventricle; here, under the influence of the innate heat of the heart, some purification is effected, and the fumes or sooty excreta pass through the pulmonary valves to the lung and are voided in expiration. From the right ventricle a stream passes by way of the pulmonary artery to the lung, giving nutrition to it, a very small amount finding its way from pulmonary arterioles to pulmonary venules by way of their mutual anastomoses. Yet another moiety filters by innumerable invisible pores through the muscular septum from the right ventricle to the left; these pores are seen with difficulty in the dead body, because the heart muscle, being then cold, is stiff and hard; still, reason assures us that they are there. In the left ventricle this blood is mixed with air drawn in from the lung by the active traction of ventricular diastole by way of the pulmonary vein, and undergoes concoction under the influence of the innate heat and engenders vital spirit (*πνεῦμα ζωτικόν*).

The heat is kept from becoming excessive by the cooling influence of the air drawn into the ventricle; this, indeed, is the main purpose of respiration, and when the air has effected this it is returned again to the lung. This higher grade blood charged with vital spirit undergoes an ebb and flow, in part by way of the pulmonary vein between the left ventricle and the lung, the imperfect closure of the mitral valve permitting this and also allowing the escape of waste fumes; and in part by way of the systemic arteries between the left ventricle and the most distant parts of the body, endowing them with *function*. Within the brain it engenders animal spirit (*πνεῦμα ψυχικόν* = breath of the soul); this subtle essence, distilled as it were from the blood, is carried outward from the brain by the nerves, initiates motion and sensation, and subserves the *highest functions* of the organism.

Such in outline is the ground plan of Galen's physiology of the vascular system; his belief in the existence of permeable foramina in the septum of the heart, borrowed seemingly from the post-Hippocratic school, placed one more obstacle in the way of the elucidation of the circulation. The belief was not a mere gratuitous figment in an age when dissection was almost exclusively confined

to the lower animals. The heart of the amphibious frog has but one ventricle, and the reptiles afford numerous instances of incomplete division, the complete septum being constantly found not till we reach the bird level. Again, patent foramen ovale is constant in the human fetus, and not rare throughout life, while minute defects, such as to permit the passage of a bristle, are common. Such conditions as these may well have lent a semblance of likelihood to a false anatomical preconception.

As against this capital anatomical error we must set to the credit of Galen his reiterated assertion of the existence of anastomoses between the terminal ramifications of arteries and veins, both systemic and pulmonary. The bridging of these gaps, speculatively at least, was a condition precedent to the discovery of the circulation. Erasistratus had stood sponsor for potential anastomoses, those of Galen are actual, and he claimed to have proved their existence experimentally, by showing that it was possible to drain all the blood out of the body by a wound in a single artery. He explains exactly how the interchange of arterial and venous blood takes place, diastole of the artery drawing blood out of the vein and systole letting it back.

As in the systemic system, so in the pulmonary, Galen asserts the existence of anastomoses, by which some small amount of the blood brought by the pulmonary artery to the lung finds its way directly into the pulmonary veins and so into the left ventricle. He was confirmed in his belief by the consideration that the pulmonary artery is far larger than would be necessary if its purpose were merely to give nourishment to the lung. The mechanism of transference he explains thus:

> When the thorax contracts the pulmonary veins within the lung are driven in and compressed on every side, and force out very speedily the inspired air that is in them, and at the same time take up a certain amount of blood by these tiny communications. Now this could never happen were the blood able to flow back into the heart through the orifice of the pulmonary artery. But its return through this great opening being prevented, a certain portion of it distils into the pulmonary veins by the minute orifices mentioned.

Thus Galen, building on anatomical foundations laid by Aristotle, made one step onward towards the discovery of the pulmonary circulation, though he shows no sign whatever of understanding its fundamental importance. In effecting this pulmonary transit of a small quantity of blood, Galen makes it clear that the motive power is derived from thoracic compression of the pulmonary vessels, and not from the muscle of the right ventricle; indeed, he decides definitely that the heart wall is not muscular.

Galen is well-nigh as vague as Aristotle as to the source from which the blood derives its motion; sometimes he asserts the movement and seems to regard explanation as superfluous or impossible; at another time he seems to regard alternating diastole and systole as the efficient cause of flux and reflux, not only locally, but throughout the vascular system. Inconsistencies are frequent in Galen's physiology, because he does not hesitate to manipulate it so as to establish a thesis; but we shall not condemn him overmuch if we bear in mind how few years separated him from the time when the whole of physiology was armchair speculation.

If Galen had not decided that the heart was not muscular he might well be acclaimed the first exponent of the myogenic theory of its activity, for he locates the stimulus to activity in the heart itself; he attributes to it an inherent tendency to pulsate (*δύναμις σφυγμική*), which is equivalent to saying that the heart pulsates because it pulsates. It was impossible for him to refer the cause of the heart beat to the blood, as Aristotle had done, for he knew that rhythmic activity may persist for a while in the excised mammalian heart; he was driven, therefore, to make it inherent in the heart. It cannot be said that even now we are provided with a much more satisfying answer, though splendid additions have been made in recent years to our knowledge of the site of origin and the route of propagation of the impulse through the heart, mainly by the work of Gaskell, Kent, Keith, and Flack, who have worthily maintained the pre-eminence won by Harvey for this country in the domain of the physiology of the vascular system. In recognizing the primacy of the right auricle, as the first part to live and the last part to die, they were following in the footsteps of Galen, though for the auricles generally Galen had scant respect, regarding them as introduced into the vascular system as a provision against the too violent strain of ventricular diastole on the veins that open into them. Galen also knew that contact with cold water tended to arrest pulsation.

Galen performed just the same experiment as Harvey in opening the pericardium and observing the movements of the heart, but failed entirely to draw the same conclusions as to the orderly sequence of movements in the various chambers of the heart; he did not even perceive that auricles, like ventricles, have both a systole and a diastole.

Galen proved by a vivisection experiment that Aristotle was right in saying that the arteries contained blood and not air. He placed two ligatures upon an artery and divided the vessel between them, when it was found to contain only blood; corroboration was afforded by plunging a cannula into the left ventricle, when blood flowed out instantaneously without any escape of air.

Galen tells a delightful story of such a demonstration of the presence of blood in the aorta, which shows incidentally that the medical student has remained true to type for some 1,800 years. Some ignorant anatomist repeatedly promised to demonstrate that the aorta contained no blood, but never got beyond promises, though Galen's students brought him animals and begged him to show them; the man, however, took refuge in demanding payment for the task. Thereupon the young men put down between them some 1,000 denarii, for him to pocket if he was successful, but this only produced a further crop of excuses. At last, however, their persistence prevailed, and he summoned up courage to take a scalpel and open the left side of the chest, where he fancied he would get the best view of the aorta, but he exposed his ignorance of anatomy by cutting down upon a bone. Then the young men, who had tabled the stakes, jeered at him, and undertook to carry out his demonstration for him. Opening the mediastinum, as they had seen Galen do, without wounding any of the vessels, they quickly passed two ligatures round the aorta, one near its origin from the heart and the other close to where it meets the spine; then they confidently promised that when the animal was dead, they would show that the part between the two ligatures contained no blood. But, lo and behold! when it was opened, there was blood in the vessel!

THE ADVANTAGES AND DISADVANTAGES OF GAUZE PACKING IN ABDOMINAL OPERATIONS.

BY

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IN attempting to arrive at a conclusion regarding the conflicting opinions and practices of surgeons on any particular method of operative treatment no more satisfactory deciding factor can be found than that derived from prolonged practical experience coupled with careful observation. It is on such a basis that I venture to offer a few remarks upon a subject with regard to which we are as yet far from any unanimity of opinion or of practice.

The present attitude with regard to the use or non-use of gauze packing in abdominal operations may be briefly expressed by saying that there are surgeons who believe in the good effects of this agent in ensuring a more satisfactory result; and there are surgeons who equally hold that its use is fraught with ill effects. My effort will be to bring forward reliable statements of facts bearing on both sides of the subject, so that it may be possible for an impartial opinion to be formed. If the facts adduced sufficiently prove that the use of gauze packing is or can be harmful then its employment should unquestionably be abandoned. But we have ever to remember, in mitigation of such a statement, that surgical resources are not bound by rigid limitations; that where in one case a certain practice may be beneficial, in another the adoption of the same measure may be harmful. Careful and reasonable discrimination is needed to decide when a particular method of treatment should be employed, and when it should be avoided. If the element of risk can be shown

constantly to be present, then, even in the face of possible good, it becomes a question whether any particular line of treatment should be persisted in. In considering the facts connected with the two sides of the subject, it may, in the first place, be stated, probably without contradiction, that the question of the use or non-use of gauze packing only arises in operations upon the abdomen where sepsis in some form is found to be present. In by far the larger number of cases these operations are concerned with inflammatory affections of the vermiform appendix and the female pelvic organs. The frequency with which pus or necrotic tissue is present in inflammatory diseases of these viscera naturally leads to the desire to combat effectually the possible extension of one or other of these pathogenic processes.

The Advantages of Gauze Packing.

We may fairly assume that the effects we see which result from the use of antiseptic gauze packs in external wounds of the body similarly result when these same agents are used for intra-abdominal lesions. The gauze pack becomes freely saturated with the exudates poured out from the lining walls of the space which has lodged necrotic tissue or been the cavity from which pus has been evacuated; and the assumption is probably correct that the antiseptic agent within the gauze has a sufficiently sterilizing effect upon these exudates to prevent any further septic advance. Again, it is also probably correct to assume that this absorption, by admitting of direct contact of the gauze with the lining walls of the septic area, excites a normal reaction and reparative influence upon the surrounding parts; in other words, it induces the formation of healthy, healing granulation tissue. It would appear therefore that, so far as serving to check the advance of sepsis and to stimulate the formation of a healthy granulating wound, packing with antiseptic gauze is distinctly advantageous. Thus, one may not unreasonably infer that the beneficial effects obtained in the use of gauze packing for external wounds would accrue equally in the case of similar lesions occurring within the abdomen. And if there were no other considerations which entered into the subject, it might justly be concluded that packing with antiseptic gauze a septic intra-abdominal wound was at least a reasonable, if not a generally advisable, line of treatment.

But whatever the analogy between septic processes taking place within and without the abdomen, there is absolutely none between the parts involved. The peritoneal cavity with its viscera introduces an entirely new aspect. There is nothing comparable between these parts and the external soft tissues of the trunk and extremities. Inflammation of these latter may have some impairing results, but they will be nothing to compare with what may accrue should the bowel or the peritoneum be involved in a septic process. It is the introduction of these important factors into the discussion that raises the question of the possible disadvantages connected with the use of gauze packing in the treatment of intra-abdominal septic wounds.

Disadvantages of Gauze Packing.

It has already been indicated that the contact of gauze packing with the walls lining any septic space has a stimulating, if not an irritating, effect upon the granulations of these walls; this, in so far as it affects certain soft tissues of the body, may be a perfectly beneficial influence. But what is the effect upon such a sensitive structure as the peritoneum?

Let me describe a rather instructive experiment which was unintentionally made when operating upon a case of pyosalpinx. Before attempting to deal with the pelvic matted mass, some dry, simply sterilized gauze packing was introduced into the upper part of the wound or peritoneal cavity to protect the intestines, as well as to prevent their descent upon the septic pelvic area when this latter was freely exposed. It took about half an hour to complete the pelvic part of the operation. The gauze packing was then withdrawn, and in doing so it was found that it had already become intimately adherent to the visceral peritoneum covering a loop of small intestine. On peeling off the gauze an acutely injected surface was exposed, its rose colour and slightly roughened surface forming a very striking contrast to the smooth, glistening, grey serous tunic of the healthy neighbouring coils of bowel. The difference was sufficiently marked to be noticed by my assistants and others whose attention I drew to a fact that seemed to me, when rightly judged, to possess no little clinical significance.

Let me instance another very instructive case:

Mrs. M., aged 33 years, was admitted to the Victoria Infirmary in May, 1906, suffering from gall stones. Operation was performed, and stones were removed from the gall bladder and one from the common bile duct.

She remained well for some years, but was again admitted to hospital in 1912—that is, six years after the first operation, for a recurrence of biliary colic. Operation at this time revealed the presence of a stone impacted in the ampulla of Vater. The stone was removed by first opening the second part of the duodenum, and then incising over the stone. The incision was stitched up; and, to secure against leakage from the bowel, a piece of iodoform gauze packing was placed upon the incision and led out of the parietal wound. By some unfortunate oversight in the subsequent dressing of the case, the gauze plug was allowed to slip unnoticed into the wound. The parietal wound healed well, and the patient made an uninterrupted recovery. About six weeks later the patient returned to the infirmary complaining of gastric symptoms which very evidently indicated obstruction. The abdomen was opened, and a mass of adhesions so dense and firm existed in the region of the pylorus—evidently the result of the two prior operations—that it was thought better not to attempt to separate them. Believing them also to be the possible cause of the obstruction, the operation of posterior gastro-jejunostomy was proceeded with. However, when the stomach was opened prior to the fixation of the jejunum, and the pyloric aperture examined, both it and the first part of the duodenum, instead of being narrowed, as was anticipated, by external adhesions, were markedly dilated, proving that the cause of the obstruction must be lower down. On pulling up the first part of the jejunum, preparatory to completing the anastomosis, it was found to be filled with some semi-solid material, somewhat sausage-like in shape and consistency. On opening the bowel, a piece of gauze presented. On withdrawing it, it was found that the upper end was matted together in the form of a knob, quite scentless, but the other end tapered off and extended some distance down the bowel. It had a distinct faecal odour. The operation of posterior gastro-jejunostomy was proceeded with, and the patient made an uninterrupted recovery.

There is but one explanation, I think, of the condition found—namely, that the gauze plug used at the second operation had ulcerated its way through the parietes of the second part of the duodenum, and been carried down by normal peristaltic action to the upper part of the jejunum, where, for some unaccountable reason, it had stuck, and proved the source of the obstruction. Another somewhat similar case is worthy of narration.

It was in 1910 that I operated in the Victoria Infirmary upon Mrs. T., aged 49 years, for well-marked pyloric obstruction. Gastro-jejunostomy was performed. As a protective measure, prior to making the anastomosis a plug of gauze with tape attached to one end was inserted into the abdominal cavity—a practice constantly carried out. A pair of pressure forceps is attached to the end of the tape to prevent the possibility of the plug slipping into the abdomen and being forgotten to be withdrawn. In this particular instance the forceps cannot have been attached, and the tape must have got pushed into the peritoneal cavity and been overlooked. She made a good recovery, and left the infirmary about a month after the operation, taking her food well and suffering from no discomforts.

I was asked by her doctor to see her about two years later for acute intestinal obstruction. He then told me that about three months after she left the infirmary she noticed a string, as she called it, protruding from the anus, which upon being pulled withdrew a long strip of gauze. For the acute obstruction she was at once removed to the infirmary and operated upon. Some adhesions were encountered, and one band which passed across a loop of bowel, considerably constricting it, was obviously the cause of the obstruction. A linear scar was noticed on the anterior surface of the sigmoid flexure, and this, as far as it was possible to discover, was the only evidence to suggest that the gauze may have made its entrance into the bowel at this spot.

It is not unreasonable to assume that the adhesions which were found, together with the constricting band, were the result of a chronic adhesive peritonitis set up by the presence of the gauze for some time free within the peritoneal cavity. Inasmuch as it was only three months after the operation upon the stomach that the patient withdrew the plug from the rectum, it was at least within this period that the gauze had ulcerated its way into the intestinal canal.

My object in introducing these two cases is not to illustrate the risks attendant upon the use of gauze for strictly operative purposes—risks which may be avoided, and which when followed by untoward results might justly be attributable to a certain amount of culpable

neglect—but to support the deduction which I intend to draw that the presence of gauze packing in contact with healthy bowel for any length of time may result in the visceral walls being perforated. I have, on not a few occasions, noticed that, on withdrawal of a gauze pack which had been left in the wound for a few days after the operation, a faecal discharge has, if not immediately, in a day or two, ensued. One could not be certain that the gauze was the cause; but the sequel has been too frequent not to make one somewhat suspicious of its being so. It was only after noticing the very striking and comparatively rapid effect of a piece of dry gauze in contact with the bowel for so short a time as half an hour—as illustrated in the first case narrated—that my suspicions seemed confirmed. It is quite possible that, had the gauze been previously wrung out of a warm saline or sodium citrate solution, this rapid adhesive effect would not have been produced. But with such results as those which accrued in the latter two cases it is hardly possible to conceive that any different course would have been pursued by the gauze had it been dry or moist. For, if used dry, it must soon have become soaked with the exudates, and so acquired much the same condition as that originally inserted moist. It is reasonable, however, to infer that a solution such as that made with sodium citrate, when saturating gauze tissue, will render it less irritating to the peritoneum—for the comparatively short period of an operation—than if the material had not been so treated and had been employed dry.

There may be said to be four other disadvantages arising out of the use of gauze packing, and these are in more or less direct proportion to the length of time the packing is retained. One is that if the packing be employed in septic cases without the adjunct of a drainage tube, it may act as a dam to the escape of any discharge. As soon as the gauze has taken up the exudates to the limit of its absorptive power, the overplus must either make its exit through the meshes of that part of the pack which is led out of the parietal wound, or it must accumulate in the infected region or be diffused further afield.

A second disadvantage is the possible and, indeed, probable irritative effect of the packing upon neighbouring coils of healthy bowel, leading to a low form of adhesive peritonitis. Coils of intestine may thus become matted together or become adherent to the parietal peritoneum, and the adhesion so resulting may in some way lead to obstruction.

A third disadvantage is that whenever an opening is maintained through the parietal wound for any time—and the longer the time the more likely is the accident to happen—a weakened cicatrix is almost the inevitable precursor of a ventral hernia.

And, lastly, the withdrawal of a gauze pack is a very painful process. The degree of painfulness is possibly dependent upon the amount of gauze in contact with, and probably to some extent adherent to, the peritoneum lining the abdominal parietes. It is a known fact that while the visceral peritoneum possesses little or no sensitiveness to mechanical irritation, any friction or undue pressure upon the parietal peritoneum causes pain. So great is the pain in some cases when a "pack" or "plug" is being withdrawn that the administration of an anaesthetic becomes necessary.

In thus indicating the advantages and disadvantages of the use of gauze packing in intraperitoneal work, I have sought to do so by simply stating facts, the result of my own personal experience in abdominal surgery; the disadvantages would seem to so greatly outweigh the advantages that but one conclusion appears warranted—that gauze packing should be avoided except under definite and clear limitations. These limitations may be thus expressed: the use of as small a piece of gauze as possible and for as short a time as possible, which equally connotes the avoidance of large packs retained for several days.

A RECENT enactment of the Government of the Argentine Republic forbids pregnant women to work for a month before the expected date of delivery, and requires mothers to rest for forty days after confinement. They are to receive their full wages during both periods. Every factory and workshop where they are employed must be provided with rooms furnished with cradles, and mothers must go there for fifteen minutes every two hours to nurse their babes.

REMOVAL OF TONSILS AND ADENOIDS.

BY

SIR CHARTERS J. SYMONDS, K.B.E., C.B., F.R.C.S.,

CONSULTING SURGEON, GUY'S HOSPITAL.

THE admirable paper by my friend and former house-surgeon, Mr. W. H. Bowen, in your issue of October 4th, on the whole question of operation for removal of tonsils and adenoids deserves to be carefully read. It seems to me the soundest presentation of the subject we have had for a long time. I ask permission to emphasize one point, and to differ on another.

I.

That complete removal of the tonsil can be effected by the ordinary Mackenzie guillotine I have demonstrated for many years. That I have not succeeded as often as I wished is probably, and I hope is, due to my ignorance of the method described by Mr. Bowen. The ring, as he points out, needs to be placed behind and below the tonsil. Standing on the right side with the head very slightly inclined back, the left tonsil is first removed. The handle of the guillotine is brought across to the right, the fingers of the left hand press the tonsil inwards, while the thumb presses the blade outwards. Thus a firm grasp is secured. The head is immediately turned to the right and the blood swabbed away. Then the process is repeated on the other tonsil, the operator remaining on the patient's right. The fingers of the left hand control the blade while the thumb presses the tonsil inwards from behind the angle of the jaw. Mr. Bowen uses the guillotine with blade reversed, as have others, but the special feature to my mind is the manner in which he manipulates the inter-palatal portion of the tonsil into the ring of the instrument. If it falls to my lot to remove any more tonsils this method must be tried, though a few days ago both tonsils on removal by the method described showed rounded capsulated deep surfaces.

II.

Is complete extirpation necessary? What amount of relief has followed partial removal? and in what proportion has recurrent tonsillitis occurred? These are important questions, especially in view of the large number of children now submitted to operation under the education scheme.

Some years ago I collected the after-history from private cases over a period of ten years and found the results had been almost uniformly good. Recurrence was very exceptional, and I can recall only one case requiring a repetition of tonsillectomy. I doubt if there be 1 per cent. of recurrence in children. If so, the modern operation of complete removal by dissection, involving as it has done serious bleeding, followed at times by anaemia, and sometimes by death, requires much to justify its general adoption.

My long experience and my notes of cases convince me that the guillotine is the best instrument. Those who operate frequently will develop modifications of their own, which they may think suitable for general adoption. It must be remembered that safety is a matter of the first importance, that the operation is widely practised, and by many with limited opportunity of acquiring dexterity.

No doubt in most operations the deep portion of the tonsil remains. Though the amount of harm that results is very small indeed, I have for some years removed this remnant by a curette, and think with benefit. Hartmann's right-angled adenoid curette is the most convenient, but any sharp spoon will answer.

III.

The point on which I would differ from Mr. Bowen is the anaesthetic employed. In a well organized unit of experts, constantly doing team work, risks are reduced to a minimum, and the anaesthetic securing the most rapid effect and quickest recovery will be employed. But again, for wide employment and by persons of varying experience I cannot think that ethyl chloride is safe, nor does it give sufficient time for any but the dexterous operator who can complete removal of tonsils and adenoids in two minutes. Even then I much doubt if there be sufficient time to clear Rosenmüller's fossa when filled with soft adenoid tissue. For these reasons I have never

liked this agent. But this may be prejudice. Whatever anaesthetic be employed, safety must be the first consideration. Death should never occur in so simple a proceeding, and has always been due to the anaesthetic. Chloroform, either pure or in mixture, has been the cause. It is surely an excuse to talk of the status lymphaticus.

My object in this note is to emphasize the safety of ether for general use in removal of tonsils and adenoids. It became necessary in the out-patient department at Guy's Hospital as early as 1890, when these operations became numerous, to devise a rapid and safe method of producing anaesthesia, and one followed by quick recovery. Ether given by Clover's inhaler we found fulfilled all these conditions, and during thirty years I have—except when in private a special anaesthetist has insisted on some modification—employed no other method. To this, and this alone, I must attribute the absence of any fatality. There were some 300 operations each year at Guy's, and, adding cases in private, the number might safely be set down as between 4,000 and 5,000. Let me add that in private in the early days the anaesthetic was nearly always given by the medical man, who very rarely knew anything about ether. I never went to a case without ether and a Clover's inhaler, and generally put the patient under myself, leaving the doctor to carry on while completing my preparations.

Though I have been constantly operating during the war and supervising others, and therefore attending many operations, I question whether any anaesthetic can compete with ether for short operations, or Clover's inhaler as a means of administration where gas and oxygen are not available. The open method has, of course, replaced all others for long operations. There are some little tricks no doubt connected with the successful use of a Clover, and if you will give me space some day I will describe how a child or adult can be put under without a struggle, and without any feeling of suffocation, in four minutes.

Gas given before ether in throat operations is distinctly harmful; it produces much congestion and mucus, and prolongs the whole operation. Ether given by Clover's apparatus will, after four minutes, give an equal period of complete anaesthesia without abolishing the reflexes.

Let me in conclusion confirm the great importance of Mr. Bowen's test of safety when ethyl chloride is used, and I would also add chloroform—not to begin until there is a pharyngeal reflex. In my early operations on tongue cases I noticed that the breathing sometimes ceased when the tongue was drawn forward; I therefore waited until some resistance to the opening of the mouth returned. Then only is it safe to insert the gag, and the same applies to all mouth and throat operations.

CUTANEOUS ANTHRAX.

BY

ERNEST F. NEVE, M.D., F.R.C.S.Edin.,

SURGEON TO THE KASHMIR MISSION HOSPITAL.

Anthrax is extremely common in Kashmir among cattle. Every few years an epidemic sweeps through the valley, carrying off thousands. It is discreditable to the administration that the prophylactic serum, which is procurable at the Imperial Bacteriological Laboratory, Muktesar, has not yet been brought into use.

Since 1900 seventy-five cases of "malignant pustule" have been treated in this hospital. The disease is becoming more frequent, for during the past three years twenty-five patients, or one-third of the whole, were admitted. All were males and between the ages of 14 and 57. I have never seen "malignant pustule" in a female. No doubt in some instances the disease was contracted while skinning sheep and cattle dead from anthrax. So far as I know, the hides of these animals are exported without any kind of warning or precaution. Flies do not, I think, play an important part in the transmission of cutaneous anthrax. It is quite as common in midwinter when there is hard frost as in the summer.

Of the cases 40 per cent. were affected in the upper extremity, 32 per cent. on the head, neck or face, 12 per cent. on the back, and the rest on the abdomen, chest, or lower extremity.

Cutaneous anthrax is a better name than "malignant pustule." The appearance is characteristic. The lesion is like a very large and acutely inflamed vaccination vesicle, with depressed dry dark brown centre and raised circumference with vesicular edge. The skin around is red, and there is inflammatory oedema. There may be satellite vesicles. These blisters contain serum, and the bacillus can easily be demonstrated. In some cases the lesion is of considerable size. I have seen one five inches across, and another with a diameter of four inches. The lesions may be multiple. One patient had six separate infected areas, another five. In a third the forearm and the head and neck were involved. A fourth case had five lesions on the abdomen. Another, a man who worked among sheep, and who had an abscess in the iliac region, got infection of the wound. The constitutional symptoms vary much. In cases brought late there may be profound toxaemia, with circulatory depression, high temperature, running pulse, albuminous urine, and other signs of visceral infection. One patient died the evening of admission. Four others died within forty-eight hours. In these late cases in which systemic infection has occurred, no treatment avails. In Kashmir the cases occur among villagers, farmers, shepherds, etc. I have not met with a single case of pulmonary infection.

The treatment we adopt is very thorough cauterization with a red-hot button cautery. Excision and incisions, recommended by some textbooks, I regard as almost equally dangerous, tending as they do to open up fresh planes of communication, and thereby promote systemic infection. The natural local reaction to the pathogenic irritant is very strong. There is most vigorous leucocytosis. As a rule the blood is not infected. The cautery, while destroying the virus, also increases the local reaction. Clinically, our records point to this as the most satisfactory method of local treatment. Sclavo's serum has been recommended. But most of these cases, when they come under treatment, must have already produced their own antitoxins; those who have not and are almost or quite moribund are hopeless. Seven cases of our series of seventy-five died, giving a mortality of 9.3 per cent.

RUPTURE OF LARGE INTESTINE: OPERATION: DEATH.

By Captain E. HUNTLEY, R.A.M.C.,

SURGICAL SPECIALIST TO THE MILITARY HOSPITAL, FARGO, SALISBURY PLAIN.

I was under the impression that without ulceration, associated with recent or old disease or with the presence of new growth, rupture from straining at stool could not occur. In the following case, however, a man, straining badly, ruptured his bowel at a site where neither enteric nor dysenteric ulcers are commonly found.

Captain ——, aged 34, was admitted to hospital on May 26th, 1919, suffering from intense abdominal pain. The history he gave was that he had always been very constipated. He had served nine years in India, but had never had typhoid or dysentery. He had had attacks of malaria, the last five or six years ago, but up to the afternoon of the day of admission he had enjoyed excellent health, being, as he expressed it, "as strong as a lion." About 4 p.m. on the day of admission he went to the latrine, and while straining very hard, felt "something give way," and a sudden pain in the splenic region of his abdomen. He had felt sick, but up to the time of admission, about 6 p.m., had not vomited; he had passed flatus. He was in a somewhat collapsed condition, cold and clammy. Temperature 97° F., pulse 88. The abdomen was distended, but not markedly. There was general tenderness all over, but mostly under the left costal margin, and here there was more rigidity than elsewhere. Liver dullness was absent. Whilst examining him he vomited. There was nothing characteristic in the vomit. Examination by the rectum revealed nothing abnormal; no faeces could be felt. An attempt to give an enema caused him such intense pain that it was given up.

Captain J. R. Caldwell, R.A.M.C., very kindly saw the patient with me, and it was decided to operate at once. An abdominal incision was made in the middle line above the umbilicus, and later extended both upwards and downwards. As soon as the peritoneum was opened there was an escape of turbid fluid with flaky material. Large quantities of fluid were found in both flanks, with portions of floating vegetable matter. After diligent searching, nothing in the nature of a rupture was found until the abdominal incision was extended downwards well below the umbilicus, when a rent in the large bowel about the junction of the sigmoid and rectum was visible. This rent

was quite without any induration about its edges, and had all the appearance of being of recent origin; it was about an inch in diameter. It was closed by a purse-string suture. The abdominal cavity was then sponged as dry as possible, a large quantity of liquid and solid faeculent matter being mopped out of the pelvis and two drainage tubes inserted. The patient became very collapsed and pulseless towards the end of the operation. He was put back to bed and the usual methods adopted to try and overcome the shock. He passed a very restless night, with continual vomiting of darkish brown fluid. He died about 3 p.m. next day, never having got over the shock of the operation.

Post-mortem examination of the bowel was made by Captain Caldwell, in the presence of Colonel Sir A. W. Mayo-Robson. No ulceration or disease of any kind could be made out. The rent was on the free side of the bowel, and the suture had completely closed it, rendering it water-tight.

The portion of the bowel affected was sent, at Colonel Mayo-Robson's suggestion, to Professor S. G. Shattock, pathologist to the Royal College of Surgeons, for examination. The report received states that there is no evidence of either ulceration or new growth nor of any diverticulum. Thus no cause to explain the rupture can be assigned.

I desire to express my thanks to Lieut.-Colonel A. R. Henchley, D.S.O., R.A.M.C.(T.), for his permission to publish notes of this case.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ASPIRIN IDIOSYNCRASY.

The following case of aspirin idiosyncrasy is of interest, after Dr. Karunaratne's case and the subsequent correspondence on the subject:

On August 22nd a man, aged 34, awoke with a severe attack of neuralgia, and at 9.15 a.m. took 10 grains of aspirin. An hour later he noticed that his eyelids and lips were beginning to swell. This was rapidly followed by difficulty in swallowing and in breathing through the nose. A rash then appeared all over the body. I saw him at 11.15 a.m., and he then had marked oedema of the eyelids, lips, and gums, and running at the nose and eyes. The arms, chest, and abdomen were covered with an urticarial rash. The pulse was 80 and the temperature normal. Two hours later the symptoms began to subside, and when seen at 5.30 p.m. the same day there was only slight oedema of the eyelids and upper lip; the pulse was 72 and the temperature normal. He could swallow without difficulty and breathe easily through the nose. He had a similar attack in November, 1918, after taking 5 grains of aspirin. On that occasion the symptoms started three and a half hours afterwards, and the attack lasted for twenty-four hours. At that time he was told that he had influenza. In April, 1918, he had an operation for mastoid disease, and since has taken aspirin only on the two occasions mentioned, and each time the same symptoms occurred. Before the mastoid operation he had taken aspirin several times without any untoward symptoms. Since the operation he has had a bad attack of neurasthenia, which lasted until three months ago.

He has been subject to nasal catarrh, but has not had nasal polypi, enlarged tonsils, or asthma.

Shanklin, I.W. R. F. Bolt.

TRENCH FOOT LEADING TO GANGRENE.

Sowar G. S., 12th Cavalry, was admitted to No. 1 Indian General Hospital, Karachi, on February 13th, 1919.

History.—The patient stated that he was exposed to damp and cold in the trenches in Mesopotamia for several days in the winter of 1918. He was admitted to No. 20 Casualty Clearing Station on December 8th, 1918, for swelling and oedema over both feet and the lower part of the legs, with severe pain, blisters and marked discoloration of the skin over the affected parts. Later on the distal parts of the right foot shrivelled and turned black, ulceration and sloughing set in, and amputation was performed through the metatarso-phalangeal joints on January 8th, 1919. In the left foot an abscess formed below the internal malleolus which burst and continued discharging for some time. He had an irregular temperature throughout.

On admission a boggy swelling with oedema was present on both feet and the lower two-thirds of both legs with slight greyish discoloration of the skin. He was unable to walk, and movements of both feet were very limited and painful. The operated stump of the right foot was discharging through several small sinuses. The probe could go about half an inch up, striking bare bone. There was no sinus in the left foot. The general health was very weak, and he was emaciated and anaemic. He was put on tonics, and a eusol bath was given to the right foot morning and evening. The wound has healed; the oedema is less, but the boggy swelling is about the same. The general health slightly improved. The *x*-ray report is as follows:

Right Foot.—All the metatarsal bones are necrosed; the shaft of each appears to form one large sequestrum, which is gradually becoming reduced in size and density and is surrounded by a growth of new bones.

Left Foot.—Irregularity of shaft of second and third metatarsal bones.

Right Leg.—Necrosis of lower end of fibula, the whole of the lower third of tibia appears to be a large sequestrum round which new bone is forming.

Left Leg.—Necrosis of lower end of fibula. The whole of lower third and part of mid-thirds of tibia appears to be one large sequestrum which is surrounded by growth of new bone.

The presence of a large number of septic sequestra presumably lying in a box of new bone formation is the unusual and interesting feature of the case. There are absolutely no signs of any abscess formation. I must thank Lieut.-Colonel R. W. Anthony, I.M.S., Officer Commanding No. 1 Indian General Hospital, and Major L. P. Stephens, I.M.S., Surgeon Specialist Karachi Brigade, for permission to send these notes for publication.

K. N. Goyal, Captain I.M.S.(T.C.),
Karachi. No. 1 Indian General Hospital.

Reports of Societies.

TRENCH FEVER.

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on October 24th, the President, Dr. E. W. Goodall, in the chair, Major W. Byam, R.A.M.C., read a paper on trench fever: its epidemiology and endemiology. He defined trench fever as a blood infection communicable from man to man by means of the louse, characterized by recurrent pyrexia, headache, giddiness, pain in the lumbar region and limbs often of considerable severity, conjunctival congestion, sweating, moderate leucocytosis at the height of the fever, and slight enlargement of the spleen.

The habits of the louse were described, and an account was given of some experiments tending to show that lice migrated more readily from the person of a febrile man to that of his neighbour than when the original host was normal. The experimental work of the Trench Fever Committee was summarized, and that of other observers, leading to the following amongst other conclusions:

1. Lice fed on trench-fever patients may be infective in from five to eight days from the first feed.
2. Such lice are certainly still infective up to the twenty-third day.
3. The excreta of such lice are infective.
4. The presence of *Rickettsia* bodies in the excreta of lice is highly correlated with the infectivity of such excreta.
5. As little as 0.1 mg. of infective excreta injected subcutaneously may produce the disease.
6. Lice can become infective on an afebrile patient.
7. The blood may still be infective so late as the 443rd day of the disease.
8. Infection probably does not occur by the mouth or by inhalation.

In the ensuing discussion, to which Dr. Buchanan, Dr. Arkwright, Mr. Bacot, Dr. Brownlee, Dr. Carmalt-Jones, Dr. Chalmers, and Dr. Butler contributed, there was some difference of opinion as to the cogency of the experiments purporting to show that lice migrated more readily from a febrile patient. The probability of the disease becoming widespread in civilian life was debated, the general opinion being that this was unlikely. Attention was drawn to the value of hyperaesthetic skin areas in the differential diagnosis.

RECLASSIFICATION AND TREATMENT OF PENSIONERS.

A discussion on "The reclassification and treatment of pensioners" took place at the meeting of the Medical Society of London on October 27th.

The subject was opened by Colonel A. L. A. Webb, C.B., C.M.G., who described the medical organization of the Ministry of Pensions. He said that in April last the medical department of the Ministry of National Service was amalgamated with the medical service of the Ministry of Pensions, and gave to the latter the peripheral medical organization which was essential. The first branch of the service dealt with reclassification or boarding, together with the supply of personnel for the various medical organizations which were set up in the country; the second dealt with treatment; the third with convalescent centres, where training as well as treatment was afforded (five or six of these centres were being organized in various parts of the country, the first at Blackpool); the fourth had to deal with accommodation and supplies, and the fifth was an intelligence branch, which was required to keep the service informed of the number of boards necessary and also to report upon developments affecting pensions overseas and at home. Approximately 16,000 men, not counting officers, came up for boarding every week. The service had now been re-boarding for a considerable time, and was organizing appeal medical boards which it was hoped would dispel individual grievances. Very large numbers of cases fell within the categories of orthopaedics, neurasthenia, and tropical diseases, and the medical service was placing on the staff of each regional commissioner officers who had had special experience in certain given disabilities or diseases, and whose duties would include the giving of advice on the formation of clinics in their region. It was hoped to have in each region or in every two regions—a region being analogous to a command—an orthopaedic centre, and radiating from each of these centres a considerable number of orthopaedic clinics under surgeons who would be within the administrative control of the commissioner for medical services of the region. On the same lines it was hoped to develop clinics for neurasthenia and other conditions. Powers would be given to the regional directors in the appointment and supervision of referees and of the staffs of hospitals. They hoped within the next four or five months to take over from the army a sufficient number of hospitals for their purpose.

Captain R. McNair Wilson dealt with one difficulty of reclassification—namely, that of cases which came to boards and hospitals with diagnoses that were symptomatic instead of fundamental. The most important of these cases were those called "D.A.H." Trench fever alone accounted for a large number of the so-called heart cases, and so did malaria and dysentery. The classification of these men as heart cases was erroneous and detrimental. The men should be reclassified according to their actual diseases, and treated and, if possible, cured. The Ministry of Pensions should refuse to accept such a diagnosis as "D.A.H."; and a diagnosis of bronchitis, myalgia, lumbago, and so forth should be regarded with grave doubt until the examiner had looked beyond the symptoms to the cause. This, if looked for, would be found much more frequently than might be expected.

Major W. Byam said that at Hampstead he had been able to demonstrate, as a result of experimental investigation, that old and chronic cases of trench fever were still infective (in one case after nine months, and in another after fifteen months). Many of the men whose condition was described as neurasthenia, or as "D.A.H.," were not suffering from the after-effects of their infections; their symptoms were due to a continuance of the infection.

Mr. Warren Low, C.B., raised the question of whether the pension in surgical cases should be assessed on anatomical or on functional grounds, and also of whether the payment of a lump sum in certain cases was not preferable to the payment of a continuing pension. He thought the payment of a lump sum might lead to an earlier adaptation of a man to his surroundings than would a continuing pension, which sugested to him that he remained unfit. He also greatly deprecated the interference of pensions agents or attorneys, whose activities in workmen's compensation cases had not always been desirable.

Dr. Montague Smith, speaking as a referee, urged that referees should remain part-time officials, owing to the fact that ex-service men were inclined to regard the whole-time referee as a Government hack, with a bias against their claims.

Dr. Carey Coombs said that at Bristol the local profession had combined to form a representative committee to hammer out some sort of system for the treatment of ex-service men. They felt, as the previous speaker had said, that the ex-service man looked upon every referee as an official who was paid to get the better of him. It was found possible at Bristol by a simple organization to mobilize the whole profession for the care of the ex-soldier. The type of organization proposed there was that the man's own doctor should have at his back a suitable panel of consultants — that is to say, men who had had service experience themselves in their particular branch of medicine or surgery—and beyond these again should be hospital accommodation, while the whole plan would be held together by an administrative officer. The idea was being taken up in Bristol with enthusiasm.

Dr. de Havilland Hall raised the question of whether the pensions authorities could insist upon any form of surgical procedure they might think necessary for putting a man into a condition in which he could again earn his living. Mr. Laming Evans, replying on this point, said that his experience at his own orthopaedic centre was that, save in the most exceptional cases, if the men were offered an operation which enabled them to resume work they gratefully availed themselves of it. He added that quite 25 per cent. of the cases coming to his own centre were disabilities of a functional or spasmodic character with no true deformity, and fortunately these cases were capable of being dealt with quite easily, given the proper persons in charge of them.

Dr. W. H. Willcox asked what steps Colonel Webb was taking with regard to classification of different kinds of diseases from the point of view of treatment. He mentioned that in hospital practice he constantly saw men who came up complaining of quite an imaginary affliction, and yet it was out of the question to describe them as malingerers.

Colonel Webb, replying first on the question of reclassification from the point of view of treatment, said that in London the boards were grouped into one big centre at Chelsea, and there the Ministry was opening clinics to assist the work of the boards. A clinic for tropical diseases—if he might so describe the set of conditions which included malaria, dysentery, and trench fever—was already in working order, with Sir Ronald Ross in charge. To this clinic patients were sent from the boards, which were working in the same building. If further classification or investigation was necessary, special beds were set aside for the purpose in hospital. The idea was that the men should be referred to the special tropical or other section for investigation, in the hope that if possible a definite diagnosis might be arrived at. The basis of assessment for pension hitherto had been the comparison of a disabled man with a healthy man of the same age. A question now urgently arising was as to the time when they should begin to consider that a man was entitled to a permanent pension. In view of this and other reclassification questions, particularly the extension of the schedule in the warrant so as to include other medical and surgical conditions than the present inadequate list and thereby to secure quicker and more uniform boarding, he had asked the Minister to request the Royal Colleges of Physicians and Surgeons to send two representatives to confer with the Ministry on these points. The first of these conferences would take place on Friday of the present week, when it was hoped that certain suggestions would materialize which would be laid before the Minister. The Ministry, added Colonel Webb, was well aware of the attitude of ex-soldiers towards whole-time referees, and it had no intention, so far as he knew, of employing such referees, or of altering the present arrangements. He was non-committal on the subject of the Bristol arrangement, and desired to see the plan in more detail; but he stated that the Ministry actually had an administrative officer or officers in Bristol, and machinery for employing consultants, both medical and surgical.

Reviews.

A PLEA FOR THE TONSILS.

PROFESSOR K. H. DIGBY'S *Immunity in Health*[1] is an essay on the function of the tonsils and other subepithelial (or gastro-intestinal) lymphatic glands in the bodily economy. He argues that the lymphatic tissue of the tonsils and appendix, for example, is of functional importance to the body, and gives good reasons for rejecting the short-sighted view that these organs are vestigial, functionless, and therefore worthy only of excision. He points out that lymphoid follicles or Peyer's patches—or both—occur from end to end of the alimentary tract, but he argues that the whole anatomical arrangement of the subepithelial lymphatic glands is such as to bring them into close connexion with the chief collections of bacteria lying outside of, but adjacent to, the tissues. "The circumpharyngeal ring meets the bacteria entering with the food (and with the inspired air in the case of mouth-breathers). The Peyer's patches, the appendix, and the solitary follicles are placed around the excellent incubating media in the ileum, caecum, and ascending colon, precisely those parts which are swarming with organisms. The stomach, on the other hand, protected from bacterial growth in its contents by the acid nature of its secretion, is almost free from lymphatic tissue, except towards the pylorus." Again, the subepithelial lymphatic glands in health, he says, are continuously ingesting bacteria in enormous numbers, and this ingestion must enhance the general powers of the organism against these bacteria. Further, he reminds us that these glands are largest and most active in young children at a period when individuals are acquiring immunity to the various common infections, while in old age all lymphatic structures tend to atrophy.

His argument, therefore, is that the tonsils must be looked upon as organs constantly sampling adjacent bacteria and immunizing the body against their invasion—both breeding and training the lymphocytes they produce for these purposes. Many ingenious arguments, based on comparative anatomy and the observation of the body in health and disease, are advanced in support of this view of the importance of the lymphatic apparatus; it has, indeed, much to recommend it. Professor Digby goes on to contend that the surgery of the subepithelial glands, more particularly of the tonsils and of adenoid vegetations, should be conducted upon lines more conservative than those at present in vogue. Mere enlargement producing no deleterious symptoms should not be considered adequate reason for operation. The indications for partial excision of the faucial tonsils should be chronic interference with swallowing or with speaking, and the removal should be complete if the tonsil contains a focus of chronic infection. Adenoids should be operated on only if they produce chronic mouth-breathing or deafness. The book is clearly written and well illustrated, and is well worthy of the attention of all practitioners, but especially specialists who deal, and deal perhaps too freely at times, with the structures mainly under consideration in its pages.

PSYCHOSES OF WAR.

IN his book on the *Psychoses of War*[2] Dr. MARR has reviewed practically the whole subject of psychiatry, and has embodied a great number of excellent clinical observations on military cases. The book is extremely well illustrated, free use having been made of prints from cinematographic films; the method of using strips of five or six serial photographs expresses abnormalities of gait and movement with good effect. Had the author confined himself to clinical observations the result would have been a very readable contribution to descriptive psychiatry, supplemented by an excellent appendix on case-taking. Unfortunately it aims at being a methodological exposition of psychiatry based on psychoses observed during the war, and viewed from this point of view it contains much that cannot be praised. Nearly a third of the book is concerned with functional neuroses. The method of classification adopted is open to criticism; we are told that neurasthenia may be divided into three classes—(1) simple, (2) hysterical, (3) organic. It is at least incumbent on anyone advancing a method of classification so much at variance with generally accepted notions of the relation of hysteria and neurasthenia to state his reasons clearly. We have been unable to find that Dr. Marr does this, and the omission is the more to be regretted because the book would seem to be addressed to the tiro in psychiatry. He ought to be told that he is being introduced to an unusual view of functional disease, and that if he adopt it in hospital and public work he may encounter much difficulty in fitting his diagnosis into the generally accepted scheme. An attempt is made to use a species of localization of faculties which, though presented in anatomical terminology, resembles not a little the old "faculty psychology" of Gall and Spurzheim. The author has been impressed by some of the work on cerebral development of Flechsig and other investigators, and he proceeds to apply this to the localization of psychical processes without, as it seems to us, an adequate appreciation of its at present fragmentary and chiefly anatomical significance. When we come across such a sentence as

> The insular centre formed the idea that the old wry neck had returned, and wry neck thus developed automatically and without reference to the memory of personality,

we would almost suspect the seriousness of a writer who has shown himself capable of brilliant and lucid exposition of clinical observations. It is questionable whether in a textbook intended for not very advanced students of psychiatry it is wise to relate complicated analytical procedures which are still subjects of investigation as though they were generally accepted as trustworthy diagnostic methods. It is scarcely judicious to leave the student in any doubt whether such a method as that of Mott and Halliburton for the detection of choline in the cerebro-spinal fluid is one to be attempted for purposes of diagnosis.

Again, the author seems hardly to appreciate the limitation of laboratory methods when he proposes a test of the toxicity of the urine as a useful differential diagnostic method between epilepsy and hysteria. The book is marred by the introduction of debatable physiological views in a manner that may mislead the uncritical, and in some places by a blending of anatomical and psychical functions, as, for instance, in the sentence, "Hypnosis acts by suggestion, and implies *a state of suggestibility in the higher neurones.*" We have said enough to show that in spite of its many excellences this book can only be safely used by those who have knowledge sufficient to enable them to form their own estimate of its physiological statements whilst appreciating the merits of the descriptive clinical matter it contains.

WILLIAM HOWARD LISTER.

WILLIAM HOWARD LISTER, while still a medical student at University College, London, served in the British Red Cross detachment with the Greek army during the Balkan war (1912); took the diplomas of the Conjoint Board in England in 1913; went a voyage and was wrecked early in 1914; was among the first twelve to receive a temporary commission R.A.M.C. in the first days of August, 1914; was at the Marne and the Aisne; was badly wounded in attempting to rescue a wounded officer on October 23rd, 1914; was in the first list of awards of the M.C. (June 23rd, 1915); won a bar to the Cross during the Somme fighting (1916), a second bar (awarded on the field) in the same year, and the D.S.O. a year later. He was killed on August 9th, 1918, near Asiago. He was not only a gallant officer, but a good organizer, and Mr. WALTER SETON has done well to print a biography of a man who crowded into his thirty-one years of life effort and experience that might have well filled the full span. Lieut.-General Sir Ivor Maxse, who commanded the 18th Division, with which Lister saw much of his service in France, in a foreword to Mr. Seton's book, says of him that "his eager temperament and immovable standard of duty made him indispensable to the troops whenever fighting was on . . . his power of organizing his own command in

[1] *Immunity in Health.* By Kenelm H. Digby, M.B., B.S., F.R.C.S., Ho Tung Professor of Clinical Surgery and Professor of Anatomy at the University of Hong Kong, etc. London: Henry Frowde, and Hodder and Stoughton. 1919. (Demy 8vo, pp. viii+130; 31 figures. 8s. 6d. net.)

[2] *Psychoses of War, including Neurasthenia and Shell Shock.* By H. C. Marr. London: Henry Frowde. 1919. (Med. 8vo, pp. xiii + 292; illustrated. 16s. net.)

battle, his courage and tenacity of purpose during an action, his example and influence with his subordinates are obvious . .. but the tale of his military achievements serves especially to illustrate the exacting duties and heroic courage required of medical officers on the modern battlefield."

Lister had shown qualities of leadership and of devotion to an ideal while still a student before the war. He was a loyal son of his college, was the leader of the protest against the perpetuation of a slander by the statue of the brown dog at Battersea, was one of the founders of University College Hall, at Ealing, and was keen to promote the corporate life of the college; but he also looked beyond the college to the university, was eager to make Londoners take a pride in the university, and was one of two witnesses for the Students' Representative Council before the Royal Commission on University Education in London. Like others who dreamed the same dream before him, his efforts did not meet with any obvious success, but if we can now see some movement in the desired direction it may justly be claimed that he did his part in helping it.

The book ought to be in the library of every students' union and medical school. It has been privately printed by the Medici Society, but copies (price 10s. 6d.) can, we are informed, be obtained from the Senior Clerk, University College, Gower Street, W.C.

NOTES ON BOOKS.

SOME little while ago we announced the forthcoming publication of *Tubercle*,[3] a monthly journal devoted to all aspects of tuberculosis. The first number, dated October, 1919, has now appeared, and will, no doubt, be welcomed by many workers in this important field of medicine. The opening article is contributed by Dr. W. Holmboe, Medical Superintendent of the Mesnalien Sanatorium, Norway, who deals with Jacobaeus's method of endopleural operations. Dr. John Guy of Edinburgh writes on the necessity for a uniform standard of classification in pulmonary tuberculosis, and Sir StClair Thomson describes a case of "innocent" tuberculosis. In addition to abstracts and notices of books, the new journal aims at giving a critical survey of the literature of tuberculosis and of progress in administrative measures; thus the first number presents a summary of the chief changes which have affected tuberculosis in its public health aspects during the war. The editors may be congratulated on the workmanlike appearance of the new magazine.

The book on *Geriatrics*[4] by Dr. THEWLIS is a short treatise on senile conditions, the diseases of advanced life, and the general care of the aged. It begins with a preface, and two introductions by authorities on the subject. The text is divided into thirty-one chapters, each dealing with some disorder or aspect of senility, and containing many serviceable hints for the practitioner of medicine. There is nothing exhaustive about the author's treatment of the topics under discussion, but many illustrative cases are quoted, and the book abounds in practical suggestions for alleviating the discomforts and disabilities to which old age is liable. Dr. Thewlis writes with sympathy, and his book may be commended to the attention of general practitioners of medicine.

The thirty-fifth edition of *Sell's World's Press*[5] contains a vast amount of information, up to date and classified, that should be of service to journalists, advertisers, and hosts of other people who are interested in the activities of the fourth estate. Here are to be found details about all the periodical literature of the world, press photographers, and agents, papers such as "Baconiana," "The Topaz of Ethiopia," "Red Tape," "B.M.G.," and scores of others with intriguing titles. One feels that the reader who is not catered for by one or other of the two thousand odd British papers and periodicals listed in one section of the book must be hard to please.

[3] *Tubercle*, No. 1, October, 1919. Subscriptions (25s. per annum) may be sent to the Publishers, Oxford House, Great Titchfield Street, W. 1.
[4] *Geriatrics*. By Malford W. Thewlis, M.D., Associate Editor, Medical Review of Reviews, New York City. London: Henry Kimpton. 1919. (Med. 8vo, pp. 250; 13 figures. 15s. net.)
[5] *Sell's World's Press*. The Handbook of the Fourth Estate. Founded by Henry Sell. Thirty-fifth edition, edited by E. T. Brown. London: Sells, Ltd. 1919. (Roy. 8vo, pp. 560. 10s. 6d. net.)

MEDICAL SERVICES IN INDIA.

PROPOSALS FOR "TRANSFER."

LIEUT.-COLONEL R. H. ELLIOT, I.M.S. (ret.), gave evidence before the Joint Select Committee on the Government of India Bill on October 13th.

At the opening of his evidence and during its course he made it plain that he was expressing his own view, speaking as a retired officer, and not as a representative of the British Medical Association. He had had no opportunity, he said, of consulting the Association, and could merely express his own views, which were founded on a very large number of letters written to him by officers in India, both in the Medical Service and out of it.

The CHAIRMAN asked the witness whether he had given attention to the recommendations of the Montagu-Chelmsford report of the bill, and of the Functions Committee, with regard to "transferred subjects"—namely, that certain departments of work should be transferred from the control of British ministers, under whom they were at present, to Indian ministers, and whether he was aware that it was proposed that some of the medical services in India should be so transferred.—The witness replied that he had given general attention to the matter.

The CHAIRMAN then said that the Committee would be glad if, speaking on behalf of the Indian Medical Service and knowing their views, the witness would state the effect on the work of that department and on its recruitment which the proposal, if carried out, would be likely to have.—Colonel ELLIOT said that he believed that the step would be extremely unpopular, would lead to a large number of retirements among senior officers, and would certainly make recruiting of European officers in this country increasingly difficult. After four years of uphill work a settlement, thanks to the continued efforts and kindness of the Secretary of State, had almost been reached, and it would be extremely unfortunate if a change which would certainly be unpopular should be made at this time.

In reply to further questions, he said that Europeans did not like serving under Indians, for they did not feel confident that they would receive the same support and that the same progress would be made under an Indian as under a British minister. All civil medical officers would be affected by it.

In reply to further questions by members of the Committee, the witness said that a large number of Indians were in the Indian Medical Service now. There was progress in the capacity, both administrative and scientific, of Indians, and there would be greater progress if time were allowed, but he did not think that their services at the present time were of the same value to India as the services of medical officers from Britain.

The task of the Indian Medical Service was to bring out the best that was in Indians, and it would be able to do so, but the country was not ripe for any large change. In his opinion the effect of transfer of public health and sanitation to the care of an Indian minister would not be for the good of India at the present time. The same energy for sanitation and sympathy would not be obtained.

In reply to another question, he said that the feeling of dissatisfaction among I.M.S. officers was not peculiar to any province; it was the same throughout India.

Mr. ACLAND—pointing out that as there were Indians in the service at present who would no doubt receive promotion in the course of time (probably soon), a stage would be reached when Europeans were serving under Indians—asked whether the objection was to serve under an Indian minister as distinguished from an Indian superior officer.—Colonel ELLIOT said that though European officers might not like serving under Indian officers, what they regarded as a serious matter was that the last appeal in any matter should be to an Indian and not to a British minister.

In reply to Lord ISLINGTON, the witness said that there had been a feeling of dissatisfaction as regards pay for some years, but that it had increased. In England and elsewhere the outlook for medical men had improved. Expenses had gone up in India as elsewhere; officers now often found it increasingly difficult to live on their pay, and they had not the same opportunity of increasing their resources from private practice. During the war many of them had been on military service.

The report of the Public Services Commission in 1915 was disappointing, but since then the Secretary of State had helped very materially, and he hoped the question of pay would be met.

Lord SINHA asked the witness whether the objection of European officers I.M.S. to work under the control of an Indian minister was purely racial.—The witness asked for a definition of "racial," and added that he did not think the matter was a question of race, but that medical officers felt that if they served under an Indian minister they would not receive the same sympathy and support they would get from a British minister. There were many Indians that Europeans would be glad to serve under, but he was afraid that many would be unwilling to serve under most Indians.

Lord SINHA said that the Committee had been informed by other witnesses that Indians would probably be too enthusiastic in the matter of sanitation, and would be carried by their zeal into initiating measures in excess of financial resources.—Colonel ELLIOT replied that his experience with Indian ministers in the Government did not at all lead him to take that view.

In reply to further questions, he agreed that the more Indians in the Indian Medical Service, the less popular would it become for purely European officers. He, however, declined to express an opinion as to whether the remedy would be to reserve the Indian Medical Service exclusively for Europeans. The matter had, he understood, been dealt with by the committee which sat under Sir Verney Lovett, and he would not presume to make recommendations on the matter.

Mr. MONTAGU said that at present sanitation and public health in India were in the portfolio of Education, while the Indian Medical Service and the welfare of its officers were in the Home department, so that if the Education member and the Home member were both Indians, the destiny of the I.M.S. under the present constitution would be in the hands of Indian members. That being so, he asked whether what was now proposed would make much difference.—Colonel ELLIOT replied that if it was found that all the work of the I.M.S. was to be placed under an Indian minister, he thought it would greatly detract from the popularity of the service and make recruiting extraordinarily difficult.

In reply to further questions, he said that the mass of Indian people took no interest in sanitation or—an instance put to him—in the prevention of malaria.

Asked whether hospitals in India and Mesopotamia had been controlled by Indian officers I.M.S. with great success, the witness said that he knew that some had done splendidly.

Asked by Lord MIDLETON whether the difficulties of the problem with regard to health in India were equivalent or greater than in this country, the witness said that he did not think that any Government in India had begun to wake up to the work that ought to be done. As an illustration of this point, he stated that there were 600,000 totally blind in the villages without anybody to care for them. Many of them might have been rescued if travelling hospitals had been sent among them. The amount of blindness that might have been prevented or cured was enormous. No Indian Government had begun to realize its medical responsibilities. Some years ago, before the war, Professor Krusius of Berlin, after visiting his hospital, asked whether he would receive and train three or four young Germans at a time if sent by the German Government. At that very time he was asking the local governments, through the surgeon-general and with his support, to send their own medical officers from their own districts to be trained at the Madras Hospital, but it was not done.

Asked whether there was not a strong case for making the head of the Indian Medical Service a member of the Governor-General's Council, he replied that he had always held that opinion which was shared by the whole service.

He added, in reply to another question, that the whole matter of medical work in India should be looked at in a bigger, broader spirit than hitherto. Much more ought to be done, and a strong impetus from the centre—the Government of India—was needed.

Sir HENRY CRAIK inquired whether, from his experience in India, Colonel Elliot thought that the substitution of Indian officers to a very large extent would mean the substitution of inferior scientific medical knowledge.—The witness said that at the present time the substitution of Indians in large numbers for British medical officers would set back the clock and stop progress. Gradual substitution was quite another thing. But to withdraw at the present time the enthusiasm, the research, and the initiative of the British medical officers in medicine and sanitation would be against the interests of India.

In reply to Sir J. D. REES, he said that it was quite a mistake to suppose that the Indian Medical Service was not popular with the people of India; it was, on the contrary, very popular.

Sir J. D. REES: You said the British Medical Association would not recommend officers to go out in the Public Works Department?—The WITNESS: I beg your pardon. I would like to say once again that I cannot speak for the British Medical Association. I have no brief for them. I am attending by request, simply as a retired officer, to give my experience. What I did say was that officers in the Civil Service, in the P.W.D., in the Police, and other services, who had come home, had called upon me to say that if Europeans ceased to enter the service they would not recommend young men to go out in the services they had themselves served in.

Sir J. D. REES said that the witness seemed to fear lest the appointment of an Indian minister of the department would impair the future of sanitation with the masses of India. Had the witness reflected what it might cost to sanitate scientifically 260 millions? The Minister might be wise in not plunging too far.—The witness replied: I am tired of this attitude on finance. I have had a beggarly 10,000 rupees refused me when I asked for it to make a medical school efficient for training Indians to minister to the needs of their own countrymen at the time when the Government which refused it, on the ground of economy, were handing back lakhs of unexpended balance to the Government of India.

In reply to Mr. SPOOR, he said that while he thought the Government of India might have done much more, he was of opinion that had the matter been in the hands of Indian instead of British ministers not one-hundredth part of what had been done would have been done; a great deal had been done, but not nearly enough.

Lord SYDENHAM asked whether it was not the case that medical research had been entirely inspired and mostly directed by European officers.—The witness said that was the case, but he thought that the time was coming when Indians would take an increasing part. Hitherto sanitary measures had depended for their execution on the efforts of the Government, and these efforts had been resisted even by riots.

In reply to further questions, the witness said that while with some notable exceptions the work of Indian medical graduates had been disappointing on the whole, he looked forward with confidence to their doing very much more good work in the future. As a matter of experience, Indians travelled very long distances to obtain treatment by European doctors.

Lord SYDENHAM inquired whether some Indian medical graduates were ready to practise either the Western or the Ayurvedic system.—The witness replied that some were, but that he hoped their number was small.

The witness agreed that if the Indian Medical Service broke down and medical services and sanitation were transferred under the diarchical system there would be a danger of serious collapse in all health questions.

There were many elements in the disinclination of British officers to serve under Indians, but one of the strongest was the reluctance of scientific men to serve under Indians who knew nothing of science and might be opposed to Western medical methods.

If Indians were to be sufficiently trained to administer the medical services, and if questions of medical relief in India were to be properly dealt with, substitution should be extremely gradual, and he considered that a leavening of Europeans would always be desirable.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee, held on October 14th, £313 2s. was voted to twenty-three applicants. The following is a summary of some of the cases relieved:

Daughter, aged 62, of M.R.C.S.Eng. who died in 1887. Applicant earns £1 a week by working on the land, and a little extra by needlework. Receives £20 at Christmas. Pays 6s. a week rent. Her property has been sold to pay debts. Voted £18 in twelve instalments.

Widow, aged 75, of M.R.C.S.Eng. who died in 1882. Only income £30 pension from another charity. Has four children, and they pay the rent, 9s. a week. Applicant is too old to work, and suffers from ill health. Cannot manage owing to high cost of living. Voted £18 in twelve instalments.

Daughter, aged 63, of M.R.C.S.Eng. who died in 1880. Has no income, and applies for help owing to the death of her brother-in-law, to whom she acted as housekeeper. Now living with her niece. Voted £18 in twelve instalments.

Daughter, aged 83, of M.R.C.S.Eng. who died in 1855. Applicant cannot make ends meet owing to the high cost of living and through the death of her brothers, who used to help her. She pays £104 for board and lodging. Voted £20 in twelve instalments.

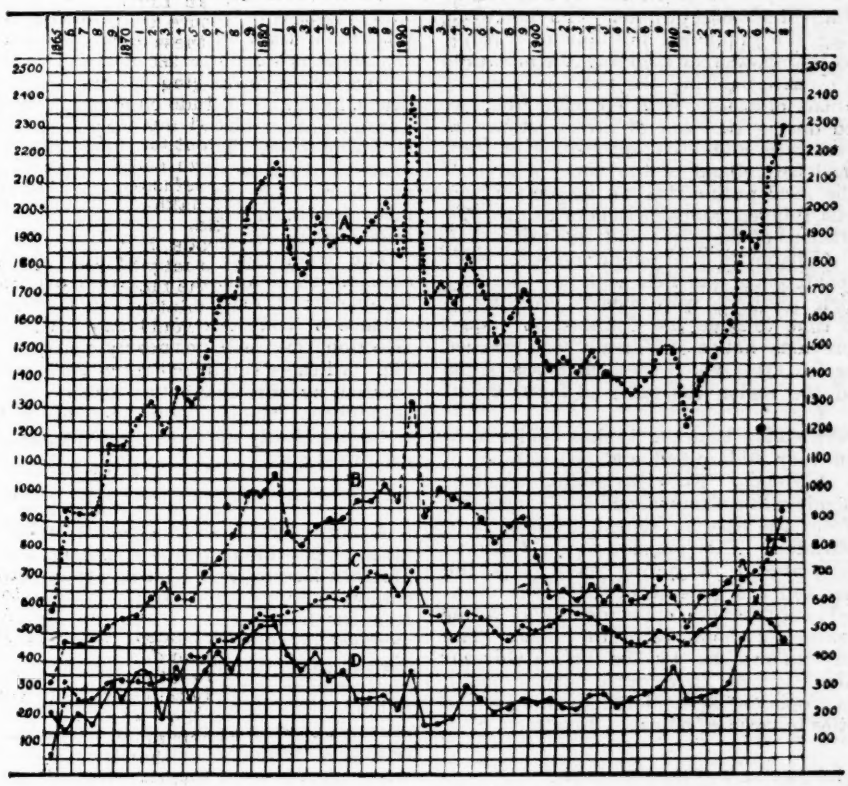
Subscriptions may be sent to the Acting Honorary Treasurer, 11, Chandos Street, London, W.1.

THE MEDICAL STUDENTS' REGISTER.

The new *Medical and Dental Students' Register*,[1] issued by the General Medical Council, gives lists of the students registered during the year 1918, together with statistical tables. The fluctuations in the size and distribution of the medical student body during the past fifty-four years are shown in an analytical table, which gives a summary of the medical students registered during each year in each of the three divisions of the United Kingdom from the commencement of students' registration in 1865 to the end of 1918.

If these tables are shown in graphic form the most curious ups and downs may be observed. Thus the gross total for the United Kingdom was 582 in 1865; it leapt up to 948 the next year, and remained at about that level until 1869, when it rose to 1,164. Between 1871 and 1875 it stayed somewhere between 1,200 and 1,300. From 1877 to 1881 it rose steadily to 2,171. During the next nine years it varied between 1,783 and 2,027. In 1891 it shot up from 1,846 to 2,405, only to fall next year to 1,671, around which figure it hovered for the next eight years. The record entry in 1891 is generally ascribed to the announcement of the forthcoming compulsory five years' curriculum, whereupon there was a rush of young men anxious to register as students under the old regulations. From 1901 to 1910 the total kept very steadily around 1,400. In 1911 it fell to 1,232—the smallest since 1873. From this low ebb it moved steadily up to 1,600 in 1914. In the two following years it kept about 1,900, rising to 2,150 in 1917 and to 2,253 in 1918, the latter being the largest since the high-water mark was reached in 1891. But whereas in 1891 out of the total of 2,405 students 1,308 were registered in England, 729 in Scotland, and 368 in Ireland, analysis of last year's total shows that Scotland had 942, England but 840, and Ireland 471. The Scottish registrations last year exceeded by far all previous records. In the first year of students' registration only 61 registered in Scotland, but there were 321 the next year, and thereafter the Scottish figures varied less from year to year and from decade to decade than those for England or Ireland; indeed the steadiness of the Scottish curve is remarkable. During the last four years the figures for Ireland have surpassed even those of the palmy days of the early eighties.

Numbers of Medical Students Registered in Each Year.



A = United Kingdom. B = England. C = Scotland. D = Ireland.

In all during the fifty-four years of students' registration rather more than 86,000 medical students were registered in the United Kingdom, the percentage for England and Wales being 47.81, for Scotland 32.59, and for Ireland 19.6. During the last quarter of the nineteenth century the gross yearly number of new registrations never fell below 1,500, but it did not again reach that figure until 1914, since when it has mounted steadily. The predominant position of the English medical schools, which up till then they had held, was lost at the opening of the present century. Notwithstanding the growth of English provincial universities Scotland has pressed harder and harder on the heels of England, and twice in the last three years her total has been a hundred greater than that of England.

[1] Constable and Co., Ltd., London.

TYPHUS IN POLAND.

Report of the Inter-Allied Commission.

We have several times lately referred to the Inter-Allied Medical Commission appointed by the League of Red Cross Societies to make a survey of the prevalence of typhus and other epidemic diseases in Poland, and of the general sanitary condition of that country. The fourth number of the *Bulletin* of the League gives the full text of the report drawn up by the Commission. It is prefaced with a note by Sir David Henderson, Director-General of the League, in which the motives for dispatching a medical commission to Poland are briefly stated. Poland was selected for special examination because typhus had already swept that country, was still prevalent there, and likely to recur owing to fresh infection from the East. Save for the typhus epidemic, the distress and disease in neighbouring countries are, however, almost as severe as in Poland. Study of the Commission's report has convinced the authorities of the League that in order to cope adequately with the situation therein revealed more is needed than the combined, co-ordinated efforts of the voluntary societies composing the League.

The Polish Government is doing what it can to stem the western advance of typhus, but at the same time it is engaged in war along nearly the whole of its eastern frontier. While the Polish army is acting as the first barrier against the further invasion of the country by epidemic disease "it can hardly be just that the whole cost of protection should fall on the guardians and that the guarded should go free. The case seems to be one which calls for active assistance from governments as well as from voluntary organizations. . . . It should be frankly stated and generally understood that the resources of the Red Cross alone are insufficient to provide all the assistance required by eastern Europe in this great emergency, even if it were desirable for voluntary organizations to usurp duties which are more properly those of governments."

Investigations by the Commission.

The report consists of three parts: the first gives a general account of the Commissioners' visit and inquiries; the second is a copy of the interim report telegraphed to the head quarters of the League, at Geneva, on September 9th;

and the third gives the chief findings of the Commissioners upon the matters referred to them. The president of the Commission was Dr. Hugh S. Cumming, assistant surgeon-general U.S. Public Health Service. The other members were Dr. G. S. Buchanan, senior medical officer British Ministry of Health; Professor A. Castellani, M.D., M,R.C.P., Italian Medical Service, and Dr. F. Visbecq, Médecin Principal de 1re Classe, French Army, Service de Santé. The Commission was appointed on August 6th last, and reached Warsaw on August 17th, where work began at once. Courteous aid was given by all officials of the Polish Government, and by non-official organizations and individuals everywhere. The first week was spent in visiting the municipal hospitals of Warsaw and a large refugee camp, and in studying the measures taken by the city authorities during the past two years to improve their methods of dealing with epidemic disease. The course pursued during the tour of investigation was as follows: The military and civil authorities of each district were notified beforehand of the time of arrival. After calling on the local authorities, an inspection was made of the hospitals, refugee camps, prisoners' camps, and of the housing conditions of the poor; and the prices and quantities of food available in the public markets were inquired into. A conference was held with the sanitary authorities, at which questions were asked according to a schedule. From time to time the Commission visited villages without previous notice. Warsaw was reached again on September 7th, after which some members of the Commission toured the region eastward as far as Brest-Litovsk.

The interim report stated that the typhus epidemic of this year had been very widespread and the number of cases and deaths enormous. Notwithstanding summer conditions the epidemic still continued, and was constantly being introduced from the east by refugees, prisoners of war, and the repatriated. This process would continue during the coming winter. Considering these facts, the military movements, and the general situation, the Commission anticipated very severe epidemics this winter unless the most energetic measures were taken. The active steps already undertaken by the Polish Government would not alone suffice. Invaluable service could, in the Commission's opinion, be rendered by the League of Red Cross Societies in various indicated directions.

Extent and Features of the Pandemic.

The main report opens with an account of the prevalence of typhus in Poland in recent years, and especially in 1918–19. The medical statistics, crude and imperfect as they were, gave indications of distinct value. Typhus, as is well known, is endemic in Poland, but before the war it manifested itself in general only by scattered cases. When, however, the invasion, destitution, and attendant causes brought serious social disturbances in 1914, typhus found in that country the most favourable conditions for its spread. In the past two years the scourge reached pandemic proportions. Almost the entire country was, and is, infected—the east, and especially the south, suffering most. From the beginning of this year to July 27th, the number of cases declared in "Congress Poland" was 124,620, with 9,657 deaths (7 per cent. case mortality). The official statistics for Galicia during the same period showed 21,208 cases, with 2,812 deaths (13.26 per cent.). In Galicia there has been a longer and better organization of public health services, and the statistical information is correspondingly more trustworthy. Among the military population during the same period there were between eleven and twelve thousand cases, divided about equally between troops at the base and troops at the different fronts.

War conditions are the evident causes of the transmission from local endemic prevalence to a state of pandemicity. "Once again typhus is revealed as the disease of physiological poverty. These causes have been sufficient to arouse latent foci. Moreover, it must be remembered that if typhus is a disease of poverty, it is also one which accompanies great migrations of peoples." Hidden in the rags of refugees from Russia the virus found Poland ripe for conquest. The most serious factor in the situation was that, notwithstanding the time of year, typhus continued, and even here and there increased, in many centres all over the country and among the troops also. Hence the fear of recurrence of a large epidemic this winter in consequence of the bad conditions of living and increased opportunities of infection to be expected in the cold season.

The characteristics of the present epidemic in Poland are briefly set out. Most cases showed the typical features described in all textbooks, and seen by the Commissioners in previous epidemics. Complications were rare in Poland, in contrast to the Serbian epidemic of 1914–15. The diagnosis is generally made on clinical grounds, but in places with bacteriological laboratories the Felix-Weil reaction is much used for confirming the clinical diagnosis. The prognosis in the present Polish epidemic seems more favourable than in epidemics observed elsewhere. The treatment is symptomatic as far as this can be carried out with a lack of nurses, and a great scarcity of the simplest drugs, food, and medical comforts. During their tour the Commissioners observed a very large number of cases of relapsing fever. This coexistence of epidemics of the two diseases has been noticed for many years. Both infections are carried by the same insect, the louse, and all the measures taken to stamp out typhus should be successful in combating relapsing fever.

The conditions favouring the spread of typhus are enumerated as follows: (1) Gross overcrowding of persons in houses; (2) malnutrition and general poverty; (3) prevalence of body lice and head lice; (4) opportunities of infection; (5) fresh introduction of infection by refugees, etc. All these conditions have been greatly intensified or created by the many fluctuations of the tide of war throughout Poland. Lousiness, for instance, now seems to be practically universal, and personal cleanliness is at its lowest ebb.

Preventive Measures.

A large section of the report deals with the importance of checking typhus in Poland for the protection of Western Europe, and considers the question of a "sanitary cordon" along the eastern frontier of Poland. Apart from the humanitarian desire to aid the Polish people—weighed down with famine, overcrowding, and epidemic disease, yet still repelling the enemy at their gates—motives of self-protection require assistance to be given to Poland. The circumstances in parts of Western Europe are such that great loss of life and interference with the return to normal conditions might easily result if there were superadded a widespread epidemic of typhus fever. "It is a matter of international moment, therefore, that proper measures be instituted to prevent a flood of infection from Russia from continuing to overrun the country, and at the same time to free Poland itself from typhus infection as well as from those conditions which are conducive to the spread of other preventable diseases." With regard to the proposed "sanitary cordon," the Commissioners think it neither wise nor desirable to advocate this at the present time, if the term is used to signify an attempt, by strict military and police methods, to maintain a comprehensive medical control over the entry of every person through the frontier; but they strongly advocate the establishment of suitable stations on the main routes from the East where refugees could be individually examined, disinfected, and (where necessary) sent to hospital or kept under observation as contacts, meanwhile being well fed and cared for. A further useful check might be afforded by the issue of "sanitary passports" to refugees who have passed the medical tests and have been cleansed and disinfected. In this sense a limited "sanitary cordon"—regarded rather as a coarse filter than as a barrier—might be most useful not only as regards typhus but also other epidemic diseases.

The Commissioners next report briefly on the deplorable sanitary state of Polish towns and villages, and the risk of epidemic diseases especially associated with such conditions—for example, cholera, typhoid, dysentery. Poland, they say, needs many years of sanitary effort and good administration before real and permanent progress can be secured. Generally speaking, all the factors exist for the propagation of epidemic diseases carried by contaminated water, food, or flies. There is a possibility that small-pox also may become seriously epidemic in the winter and spring, while in some provinces malaria is quite common. Most of the population are probably immune to enteric group infections in consequence of attacks in childhood,

but they would have no such immunity towards cholera if this were introduced. Apart from direct sanitary measures, the extent to which Poland is likely to suffer from epidemic disease must largely depend on the aid given by the allied nations to the Polish Government in supplementing the food supply this winter. Again, throughout the country there is a serious shortage of doctors; for some twenty-eight million persons there are only about 3,800 doctors, of whom 1,400 are required by the army. There is also great need of trained nurses.

In these and other kindred directions the League of Red Cross Societies should prove invaluable. The principal and most immediate needs fall under four main heads—organization, supply of material, supply of doctors and nurses, and development of the Polish Red Cross Society. The Commissioners consider that the activities of the League should be directed by a representative on the spot in close communication with the Government departments and voluntary agencies concerned. They suggest that the League might obtain from different countries the services of medical officers recently demobilized and willing to undertake infectious disease work in Poland; the experience needed is that of medical treatment and organization in military or civil hospitals. Special knowledge of infectious diseases would of course be an advantage, as also a knowledge of colloquial French or German. Other things being equal, preference should be given to younger men or those who have previously had typhus. The medical officers employed should be guaranteed reasonably good conditions of living and opportunities for really effective work.

EFFECTS OF THE WAR ON PROFESSIONAL REMUNERATION.

THE transition of the country from war to peace is proving to involve greater difficulties than the most pessimistically-minded observer would have anticipated two or three years ago. The economic situation is briefly this: The fall in the purchasing power of money has been met, and sometimes more than met, in certain fairly well defined sections of society by more or less automatic increases in incomes measured in terms of money, and has not been met, or only to a small and obviously insufficient extent, in others; the former are striving to maintain or even to increase their higher incomes, while the latter have still to make good their claims in spite of the *vis inertiae* and the popular demand for public and private retrenchment in expenditure. Perhaps the most conspicuous example of the latter class is the medical profession.

A reference to what has occurred in other fields may be useful. The case that is most prominently referred to in the public press is that of the wage earner, whose increased remuneration expressed in terms of percentage on money income is most striking, but it has to be remembered that in many such cases an altogether abnormal proportion of income is absorbed by expenditure on the necessities of existence—for example, a street scavenger whose wages may have risen from 25s. per week to 55s. per week has received an increase in money of 120 per cent., but he and his family may still be on the margin of bare subsistence. Where the income is larger a smaller proportion is expended on food, clothing, and shelter, and—seeing that the country as a whole cannot be as affluent after the war expenditure of the past four years—in such cases there is a margin of "real" income that the individual can reasonably be expected to give up, unless he can make it good by increased industry or skill. It is presumably on some such principle as this that the last award in the case of civil servants was grounded; the award in question may be summarized as providing for payment of an annual "war bonus" of £60, plus 20 per cent. of the salary, so long as the total bonus does not exceed £300.

In the two foregoing cases the amount of the bonus was fixed by specific negotiation, but in many cases the amount is more or less adventitious. In the familiar case of the retail trader the adjustment of money income to the new conditions has in fact been arrived at somewhat as follows: Most traders have a certain rough idea as to the percentage of gross profits necessary to show a reasonable net profit after paying expenses, and increase the prices paid by them by rather more than that percentage and endeavour to increase their profits by increasing their turnover. The rise in prices has brought about an automatic increase in turnover measured in money values and thereby increased their profits. For instance, suppose a grocer used to earn a 10 per cent. gross profit on a turnover of £20,000, and after paying £1,500 in expenses to have £500 left as net profit in pre-war days; then in present conditions a sale of the same volume of commodities could show a turnover of, say, £40,000, a gross profit of £4,000, and a net profit of something more than £1,000, for though some expenses, for example, wages, may have doubled, others—for example, rent, rates, carriage—will not, and his expenses will in general be below £3,000. Somewhat similar considerations apply to wholesale traders and manufacturers, though there the more rapid fluctuations in price have generally provided greater facilities for making enhanced profits at the expense of the consumer. A moment's thought will suffice to show that the medical practitioner is in a somewhat difficult position: as in the case of the wage-earner and the civil servant the problem of the proper amount to be demanded has to be faced as a specific problem, but like the tradesman whose bonus is automatic he must demand it not from a single employer with whom he can discuss the matter in all its bearings, but from members of the public with whom he is in contact. It is proposed in this article to make some attempt to examine the problem, and to suggest some solution.

The real difficulty lies in dealing with the rise in the general cost of living, but before approaching that question one point must first be settled, and that is, what adjustment in the pre-war scale of charges is necessary to cover the increased cost of working the practice? This is an essential preliminary to the main inquiry, because it is the diminished purchasing power of the *income* that is under discussion, and because an increase in working costs does not require a corresponding percentage increase in charges—for instance, if costs have doubled, it does not necessarily follow that charges should be doubled also; the effect might be to treble the profits.

In connexion with the application made to the National Insurance Joint Committee for an increased payment on account of increased expenses, a limited number of statements of income and classified expenditure were supplied by practitioners in various parts of the country, which throw some light on this question. Unfortunately only a few statements were forthcoming, and they are restricted to rural and urban-rural practices, it being found impracticable to obtain such statements for urban practices. Apart from this, there is no reason to suppose that the cases in question are not fair examples of the whole. As regards the absence of urban particulars the higher expenditure on travelling in rural areas may perhaps be fairly set off against the higher rents, rates, and general costs of work in urban areas where a higher scale of social expenditure is demanded, but this still leaves unaccounted for the expenditure incurred in dispensing in rural areas, and renders more difficult any attempt to estimate urban expenses as a whole.

The particulars given in these statements have been tabulated and are as follows:

	Year 1913 or 1914.	Year 1917.
Expenditure:	£	£
1. Drugs, instruments, professional books and newspapers and general surgery expenses	3,549	4,557
2. Travelling expenses	4,826	8,420
3. One-third of rent, rates, lighting, and firing	794	1,048
4. Salary, etc., of locum, assistant and dispenser	849	1,531
5. Telephone	178	242
Total expenses...	10,296	16,198
Gross receipts	42,784	47,135
Net earnings	32,488	30,937

A few comments on the above figures are necessary.

1. Inasmuch as dispensing practitioners must hold some stocks of drugs, the 1917 expenditure does not fairly represent the full rise in price, because drugs supplied in that year would to some extent have been paid for in the previous year. This may be regarded as sufficient offset

for the prospect of some fall in prices, and the proportional increase shown by the above figures may therefore be presumed to represent a fair permanent or quasi-permanent rise in costs.

2. In connexion with travelling expenses it has to be borne in mind that the exigencies of the war necessitated the continued use of very many cars which in normal times would have been replaced by new ones. If car replacements had occurred with normal frequency, the increase shown by the figures would undoubtedly have been greater.

3. These figures are certainly too low in both years. A scrutiny of the individual particulars shows that where a practitioner owned his house he frequently omitted to enter any charge for rent among his expenses, or for any outlay, such as repairs, which his ownership of the premises entailed. It is clear that from the professional standpoint such a charge must be made—that is, the individual in effect pays *qua* practitioner a rent to himself *qua* landlord. These rent charges, of course, do not show increases as between the two years in question, but it is clear that the capital value of such properties has already risen, and that rents must rise before long—or such houses will never be built again—and sooner or later the practitioner will have to incur higher expenses under that head.

An examination of the particulars also suggests that insufficient charges were made for the wages and board of domestic servants wholly or partly employed in connexion with the practice. In connexion with the increase in gross receipts, it must be pointed out that the increase is apparently fictitious; it was obviously impossible to obtain schedules of particulars from practitioners on active service, and there is good reason, therefore, for assuming that the increase shown is to a large extent merely a temporary transference of gross income from the practices of absentee practitioners.

These comments are pertinent and should not be overlooked, but while they modify they do not destroy the general result of the figures, which establishes a presumption that in a rural or semirural area the professional expenses amounted to 25 per cent. of the fees in the pre-war years, and that in 1917 the expenses had increased by 57⅓ per cent. of the former amount, and represented 34 per cent. of the year's gross income; and, further, in the light of the above comments it may safely be assumed that in fact the general average for such practices would exceed these figures. The absence of a reliable sample of urban cases is particularly regrettable. An analysis of the increased costs of rural as compared with urban-rural practices shows that the expense of travelling has risen more sharply in the latter, which may be due to the higher cost per car mile of short distances as compared with long ones, more frequent stoppages leading to a less economical consumption of motor spirit, but the real difficulty is to estimate the effect of the absence of dispensary charges.

In connexion with the conversion of the Civil Service scale of war bonuses on net incomes into the equivalent bonus on the insurance payments, the Ministry of Health (deliberately and after consideration and argument) acted on the assumption that 25 per cent. of the present remuneration went in expenses, excluding from such expenses the cost of drugs or of travelling outside a radius of two miles. On the basis of that exclusion there can be no doubt but that urban practices would show a higher ratio of costs, for not only would rents, rates, and the general practice charges be higher, but the social exigencies of urban work might be found to increase the motor and establishment costs. Obviously, therefore, the consideration of the question on the basis of a 25 per cent. expenditure for the country as a whole is fair to the client if not to the practitioner.

Before suggesting a general conclusion on this matter it must be noticed that the expenses taken are for the year 1917, and assuming that they were spread more or less equally over the whole year that implies that they represent average payments as at the end of June or the beginning of July. At that time the rise in prices had not reached its maximum—for instance, the percentage increase in the "working class budget" as given in the *Labour Gazette*, was 77½ in June, 1917, as compared with 115 in August, 1919, and therefore it follows that the 57⅓ increase is an insufficient index to the rise in costs measured up to the present time. The "working class budget" factors are not strictly germane, but may usefully indicate some appropriate modification, and if 57⅓ per cent. was the increase in expenses at June, 1917, then the present increase may be computed at approximately $57\frac{1}{3} \times \frac{115}{77\frac{1}{2}}$ per cent.—that is, 85 per cent.

We may therefore reach this conclusion: that of 100s. in the pre-war days, 25s. represented expenses, and that the corresponding outlay to-day would be 25s. + 85 per cent. of 25s.—that is, 25s. + 21s. 3d. = 46s. 3s.; in other words, to put the practitioner back into the same position as regards expenses, he should charge an additional amount equal to 21¼ per cent. of his pre-war fee.

The question of the increase to be made to cover the increased cost of living is a matter of much more difficulty, for not only is the collection of reliable and adequate data almost impossible, but assuming its possession, there still remains the fact that there is no generally accepted standard by which the appropriate degree of compensation for high prices can be measured. The country to-day is, as a whole, greatly impoverished as compared with its pre-war financial condition—this must be sufficiently clear to all thinking men, in spite of the way in which newly-acquired wealth is flaunted in the face of the world—and no adjustment of prices can enable everybody to enjoy the same comforts and luxuries as formerly. It seems inevitable that some classes must suffer most keenly—for example, the owners of property, annuitants, pensioners, and others having more or less fixed incomes*—but the total burden cannot be borne by them alone, and, in general, it must, we suggest, be admitted that individuals will have to realize that the pre-war standard of "real" income is unattainable. And this is not relieved but rather accentuated by the recurrence on a much larger scale of a phenomenon observed after the Napoleonic wars, the rise to prominence of a new section of the wealthy classes, a war-plutocracy.

Mention has already been made of the fact that the Board of Trade figures for the percentage rise in the price of articles consumed by the working classes is 115. We may safely assume that in general the corresponding rise for the professional classes would be 100 or more; in other words, that at present—and probably in the more or less immediate future—the pre-war purchasing power of money has been halved. It may perhaps be objected that as many of the working classes, and some sections at least of the traders of the country, have succeeded in doubling their money incomes, there is no reason why the professional classes should not do so too, but there are other factors to be considered. In the first place, the doubling of "wages" was largely essential to the maintenance of a reasonable standard of mere subsistence; and as regards the trade side of the question, it must not be forgotten that the semi-automatic nature of the adjustment in that case will also come into operation—though, doubtless, with much less celerity—when prices fall; and some fall is to be anticipated when an end comes to the rush of orders to make good war losses, depreciations, and postponed work. In other words, though the trader gains more during a period of prosperity, he loses more during a period of depression. Nevertheless, a competent observer cannot fail to be struck with the disparity of the financial rewards for training and ability in professions as compared with those in trades—a disparity which existed before the war, and to some extent may be inseparable from the social conditions of such a community as ours, but which has certainly been unreasonably accentuated by recent events.

On the other hand we cannot—with all deference to the authors of the award—regard the Civil Service rate of bonus as at all adequate. In order to test its adequacy, we may take the case of a man with an income of £1,000 a year, with no income other than his professional earnings, and with a wife and three children to support, two of the children being at school. In this fairly typical case we must discover what is the actual increase of income which the bonus gives him, and what is the actual necessary additional expenditure in respect of which the bonus is given. The bonus received under the award is £260, but from this has to be deducted (*a*) the income tax on this bonus at the rate

* Even in such cases the rise in the rate of interest obtainable on new savings and realizations and the present opportunities for selling property at enhanced prices mitigate considerably the hardships of "fixed" rents and rates of mortgage and debenture interests.

paid before the bonus was granted; (*b*) the extra 9d. in the pound on £1,260 by reason of the total income having been brought into the high-rated category; (*c*) the loss of the allowance on one child from the same cause. These deductions leave the increase of actual income due to the bonus at about £168, in comparison with what it would have been if the bonus had not been given. The absolutely *necessary additional* expenditure is (*a*) food, fuel, light, and cleaning materials, at 15s. a head per week, £195; (*b*) clothing at, say, £20 a head for self and wife and £10 for each child, £70; total £265. So that the net additional income produced by the bonus in such a case covers barely three-fifths of the additional expenditure on *necessities* and allows nothing for luxuries or even comforts. Further, there is no provision for the education of children to an extent which will enable them to earn an income which will maintain them in the same social or industrial scale as their parents. If the average practitioner is to be forced to economize on this item, not only will injustice be done to individuals, but in the long run the highest interests of the community as a whole must suffer.

Assuming that a national system of taxation commands the general support of the general body of taxpayers it may be true in the main that no section is justified ethically in passing on to another a portion of the burden which is intended for its own shoulders, but like most principles of general application it is not free from important exceptions. Thus while the medical profession is not entitled to claim that medical fees should be raised to an extent sufficient to counterbalance the heavy taxation resulting from war expenditure, it is entitled to some adjustment if that taxation reduces the surplus income available for accumulation to such a point as will no longer enable the average practitioner to educate his family suitably and at the same time provide adequately for his dependants and for old age. An interesting sidelight on this phase of the question is afforded by the evidence given by Mr. R. V. N. Hopkins before the Royal Commission on Income Tax in his official capacity as Secretary to the Board of Inland Revenue. Speaking of the "medium incomes," that is, those between £500 and £2,000 a year, he said, "the complaint which most frequently reaches the Board of Inland Revenue—and it is difficult to feel that the complaint is not well founded—is that the income tax at present rates falls with great severity on professional and other earned incomes within the range between £500 and (say) £2,000 a year. . . . It is suggested for the judgement of the Royal Commission that should it be found that some small part of the burden upon these incomes can be fairly transferred to a higher point in the scale, that course would be both a reasonable one and acceptable to public sentiment." What precisely will be the "judgement of the Royal Commission" will, of course, remain unknown for some months, but it is at least encouraging to learn that the present financial sufferings of the professional class—which falls almost entirely within the specified range—have received official recognition. But the pressure for large "social" expenditure, the advisability of which we do not wish to discuss, and the costly winding up of the war, may very possibly necessitate a higher scale of taxation, and the average medical practitioner will probably have to rest content for some years with the negative blessing of freedom from further increase in his income tax charge. Whether that is an optimistic or pessimistic view of the probabilities time alone can show, but at any rate it is clear that a professional man is very hard hit by existing taxation, and that it has been borne only by economies so drastic that their continuance would seriously prejudice his future efficiency, for occasional holidays and relaxations cannot be indefinitely sacrificed without physical staleness and loss of mental vigour and elasticity.

The above arguments may perhaps be sufficiently developed for the purpose of showing that the principle of the Government scheme of war bonus would be quite unsuitable as a working basis for a revision of medical fees and stipends. The fact is that the great majority of Civil Service salaries do not exceed £500 per annum, and salaries above £1,000 per annum are quite exceptional, and consequently the "loading" of the 20 per cent. addition by the fixed sum of £60 renders it reasonable enough in most cases. If the case of the more highly paid permanent civil servant has our sympathy, that is no reason why we should share his misfortunes, the more so as he has a pension to look forward to, on which he may anticipate some bonus if prices generally remain at their present level. On the other hand, the trader who has secured a 100 per cent. rise in his profits has been too fortunate, and is unlikely to retain his gains permanently. Common sense suggests some compromise between these two typical cases, and although the whole matter is full of difficulty there can be little doubt but that a rise of 50 per cent. in net pre-war fees would be thoroughly justified.

Taking the pre-war expenses at 25 per cent. the percentage on gross income equivalent to 50 per cent. on the net income would be 37½ per cent., so that if the amount of professional expenditure has increased by 85 per cent. of the pre-war amount the adjustment would work out as follows:

	Gross Fee.	Expenses.	Net Fee.
	s. d.	s. d.	s. d.
Pre-war basis	100 0	25 0	75 0
Revised basis	158 9	46 3	112 6

A percentage of 58¾ would no doubt be difficult to work, and in view of the fact that the 25 per cent. for expenses is insufficient for urban practices, and does not cover the whole of the rural expenses in many cases, no objection could well be raised to substituting 60 per cent. for the 58¾ per cent.

There remain one or two general considerations to be briefly mentioned. In the commercial world the presence of a lively competition in most trades is a fairly certain guarantee against unreasonable prices, though it must be admitted that the machinery often works slowly and of late years has become clogged by Government control, by import restrictions, and by an unusual sense of trade solidarity engendered by a sense of common trade difficulties and dangers, and a general desire to retain customary trade rates of profit in new conditions. In the case of medical fees that guarantee is invalidated by the dictates of professional discipline, and for that reason a greater burden of responsibility rests on the profession to refrain from such an increase as would deter clients from seeking medical assistance at the proper time, or in the mass impose an unreasonable charge on other sections of the community. Whether such an increase could be made, and if made how long it could last, may perhaps be open to argument; it is at least fairly obvious, at a time when prices generally have been doubled, that an increase of 50 per cent., to include additional expenses, would not have such effects.

It is suggested that the increase should apply to all fees, insurance capitation payments—in the case of which, however, there are some additional considerations which must modify the calculations—and salaries to which a reasonable proportion of the general expenses of the practice is applicable. As has already been explained the question of the proportion of the total receipt which is paid away in expenses really cancels out of the matter to a large extent, if not entirely.

Lastly, the increase is necessitated by the fall in the purchasing power of money, and any *substantial* and quasi-permanent return to old price levels would call for a reconsideration of the whole question. Medical practitioners have been among the greatest sufferers from the rise in the cost of living, and they would be among the first to welcome a fall in prices, and to admit that it would be undesirable to maintain a revised level of medical remuneration when the *fons et origo* had disappeared.

A NUMBER of clinics in which young women are to be trained in the care of children have been established in Greece by the American Red Cross. The course extends over six weeks, and the pupils are taught to recognize the most common types of disease. Their work will be to give instruction to mothers among the poor.

THE medical profession of Colombia propose to erect a monument to the doctors who took part in the campaign for the independence of Bogotà, won at the battle of Boyacà, the centenary of which will shortly be celebrated. The memorial is to be placed in the principal quadrangle of the medical school of Bogotà.

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THE PREVENTION OF INFLUENZA.

The success of the public health service in excluding exotic diseases, such as plague and cholera, from this country has been so remarkable that its complete failure to prevent the widespread epidemic of influenza last year is a reminder that there are classes of epidemic diseases which our existing methods, whether central or local, are impotent to control, and a salutary warning of the urgent need for extensive and intensive research into the natural history of these other diseases and the character and life-history of their infecting agents. Influenza is a good example, for we very much want some practical and efficient method of checking this readily communicated infection of the upper respiratory passages. Nor is comfort to be derived from the reflection that poliomyelitis—which appears to spread in a manner similar to influenza—has manifested itself within recent years in America in epidemic form. It would seem likely also that the active development now going on in methods of rapid and free communication may in future increase opportunities for the spread of influenza and other diseases, of whose true nature we know little or nothing, though some of them, perhaps the majority, are conveyed in a like manner.

The brilliant success of prophylactic inoculation for the prevention of enteric fever may be held to give ground for the hope that eventually a similar method may become available for checking the spread of influenza. But as the exact nature of the causal micro-organism is not yet established, the necessary scientific basis for this procedure is lacking. The prophylactic value of the vaccine of mixed bacteria associated with influenza has still to be defined with adequate controls and with convincing results. The possibility also must be borne in mind that when a satisfactory method of prophylactic inoculation against influenza has been elaborated, the immunity resulting therefrom may be found of far shorter duration than is the case with the preventive inoculation against enteric fever.

In these circumstances it is satisfactory to know that a subject of such importance as the prevention of influenza is being investigated from another point of view, even although the results at present can have only limited application. During the recent prevalence of cerebro-spinal fever among troops an attempt was made in later outbreaks to deal with the mass infection by causing not only contacts but the whole of the camp population to pass daily through inhaling rooms where the air was kept charged with droplets of a solution of zinc sulphate by means of a steam atomizer. We understand that although this treatment failed to reduce the bacteria lodged in the nasopharyngeal mucous membrane beyond a certain point, and failed to clear up chronic carriers, it appeared nevertheless, when used during an outbreak, to have a good influence in checking the incidence of the disease. It is possible, therefore, that if some equally harmless but more effective method could be elaborated for rendering the mucous membrane of the upper respiratory passages unfavourable to the growth of an infective virus, some progress might be made in providing against the spread of the disease in schools, colleges, workshops, and large business establishments. It would, indeed, not be too much to hope that some convenient modification might be devised and placed at the disposal of those more careful members of the public who were disposed to make use of it.

Special interest therefore attaches to the researches which Dr. Alexander Gregor reported in our last issue, at p. 523. The starting point of his investigations was the observation that certain industrial employees who worked in an atmosphere charged with a small amount either of nitrous oxide or of sulphur dioxide gas exhibited a relative immunity to influenza, when their fellow employees who worked in atmospheres free of these gases were heavily attacked. Dr. Gregor set himself the task of finding out the reason for this escape of the workers in the fumes, and he shows by some carefully executed experiments that air when charged with either of these gases in a concentration easily tolerated is distinctly bactericidal, and he has further satisfied himself that such air when inhaled has the effect of rendering the secretion of the upper respiratory passages acid. Now an acid medium is known to be very unfavourable to the growth of the majority of pathogenic bacteria, and it seems possible that Dr. Gregor's work, if confirmed and elaborated, may be of considerable practical value. The acidity of the gastric secretion is generally regarded as one of Nature's methods of defence against bacterial invasion. We are glad to learn that the Medical Research Committee has already provided Dr. Gregor with expert scientific assistance, and that so capable an investigator as Dr. Benjamin Moore has also taken the matter in hand. We would commend Dr. Gregor's work to the attention of the Minister of Health, who, we do not doubt, is fully alive to the urgent need of a satisfactory method of preventing the spread of influenza.

PURGATION BEFORE OPERATION.

The giving of purgatives before operation is a custom so well established as to be almost a hallowed tradition sacrilegious to question or to doubt. As J. D. Beresford has judiciously observed, most of us "take everything for granted because we happen to be used to it, that's all." It is not quite clear whether purgation before operation was a routine procedure with our fathers of old, and the question arises how far the introduction of anaesthesia and the extension of abdominal surgery are responsible for it. However, the belief that a man is a better man after a purge than he was before it is so widespread that the pre-operative cathartic probably dates back to very early times. The belief of the ancients in purgatives is, so to say, moving in the extreme. Thus Galen says that "every purgative by some specific property attracts and, as it were, sucks to it the humor to which it has a natural alliance in like manner as the magnet attracts iron." Haly Abbas held that the purgative "goes to the part where its cognate humor is lodged, from which both are expelled and returned to the bowels together." Whilst for Burton, in his *Anatomy of Melancholy*, the thing is simple: "clysters and suppositories," says he, "draw the humor from the brain and heart to the more ignoble parts." We have no option, then, but to believe that a clear bowel and a clear head go hand in hand. The experience of mankind at large confirms this, but few have realized that the relief obtained by a bowel action is so complete and so immediate that the symptoms must have depended on a local reflex, and cannot have been due to the elimination of toxins.

Dr. Alvarez[1] of San Francisco has been bold enough to traverse the generally accepted view that purgation is desirable before operation. In brief, his answer to the question "Is this purgation justifiable?" is an unqualified "No!"

The reasons adduced for pre-operative purgation may be summarized under a few heads. It is held to prevent post-anaesthetic vomiting, to ensure an empty intestinal tract, to obviate "gas pains," and to eliminate auto-intoxication. After weighing these claims in the balance Alvarez finds them wanting; and it must be admitted that he makes out a good case, for not only do cathartics often leave undone that which they ought to do, but they are apt to do things which they ought not. It is rash to assume that a patient who has been heavily purged is thereby in better condition to face the ordeal of a severe operation. A man who is about to undergo a great physical strain is not recommended to take a purge. The Oxford and Cambridge crews are not purged through the night preceding the boat race. But our unfortunate patient comes on to the table after a restless and disagreeable night, his tissues often depleted of water, feeling, as it were, "thin" through and through. Now, is this state of body compensated by commensurate advantages? Does a purge prevent, in the first place, post-operative vomiting? The answer to this must surely be No; for emergency cases very often do better than thoroughly prepared quiet ones, and certainly in France very little trouble from this cause was seen. The anaesthetist will very properly demand that his patient's stomach be empty, but that is secured by withholding food and not by giving a purge. The greatest fallacy with regard to purgatives seems to be that they empty the intestine. This is very far from being the case, and on this point Alvarez has some excellent evidence to offer.[2] The purged bowel is usually full of gas and fluid, the mucous membrane is injected, and the mesenteric circulation is disturbed. Further, free fluid may be present in the coelom; this has been noted in man, and though the exudate is sterile, it is none the less abnormal. After purgation Alvarez finds that some parts of the bowel are very irritable and inclined to contract into cord-like structures, others are paralysed and fail to respond to powerful stimuli. It seems very probable that "gas pains," which purgatives are supposed to prevent, are frequently induced by them, being due to the distension of palsied, inactive segments by the gas and fluid forced into them and held there by the more irritable and powerful loops above and below. Magnesium sulphate seems to be a particularly obnoxious drug from the surgeon's point of view, for not only does it distend the gut with fluid, but it prevents the absorption of water—a disastrous effect. Excised loops of purged bowel contract very feebly in aërated Ringer's solution, in marked contrast with the normal. Alvarez concludes that purgatives—and he has tested over fifty drugs—leave the gut in no fit state to resist and recover from operative manipulation.

The mechanism of post-operative gas pains has already been alluded to, but interference with the mesenteric circulation and the intestinal gas exchange must be added to what has already been said of their causation. Gas does not ordinarily collect if the circulation is not interfered with. But we see daily in intestinal strangulations that the loop is filled with gas and fluid from obstruction of the veins by the strangulating band, whilst above a plain occlusion, such as an annular carcinoma, there may be much fluid but rarely much gas. As Alvarez says, surgeons "have desired above all things a clean and empty bowel, whereas they should pray for a good blood supply and a normal gas exchange."[3] An empty colon will often be demanded by the surgeon, but this can usually be obtained by enemata, and may not need even that. The fourth point urged in favour of purgation—namely, the prevention of autointoxication—leads us into troubled waters. Alverez has shown that many of the symptoms of autointoxication are due to mechanical distension and irritation of the rectum by faecal masses. Certainly the symptoms disappear so promptly after an evacuation of the bowels that they cannot be due to absorbed toxins. The enema alone will relieve them.

To sum up: an empty stomach can be ensured by withholding food, and an empty colon by giving enemata. The small intestine cannot be emptied by purgatives, and is often profoundly disturbed by them. Pre-operative purgation is, therefore, better omitted.

Alvarez has, at least, stated a case, and has adduced reason and experiment to support it. Many surgeons who have given up this "preparation" of the patient will be glad of Alvarez's positive experimental testimony. Those who cling to the past and purgation must produce counter-evidence in its favour. The onus of rebuttal has been thrown upon them, and must take the form not of hazy generalizations but of definite, careful, and critical observations.

[1] W. C. Alvarez: Is the Purgation of Patients before Operation Justifiable? *Surg., Gyn., and Obst.*, June, 1918, 651.

[2] W. C. Alvarez, and F. B. Taylor: Changes in the Rhythmicity, Irritability, and Tone in the Purged Intestine. *Journ. Pharm. and Exper. Therap.*, October, 1917, p. 365.

[3] W. C. Alvarez: Cause and Prevention of Post-operative Gas Pains. *Calif. State Journ. Med.*, July, 1918.

POST-GRADUATE EDUCATION IN LONDON.

WE are glad to be able to announce that at a meeting on October 24th the amalgamation of the Fellowship of Medicine and the Post-Graduate Medical Association was finally authorized. The existing officers of the Fellowship undertook to retain office until the new executive committee is able to report on the whole organization. The officers are: President, Sir William Osler; Chairman of the Executive Committee, Sir Humphry Rolleston; Treasurer, Sir Arbuthnot Lane; Honorary Secretaries, Mr. Philip Franklin, Sir J. Y. W. MacAlister, and Mr. Herbert J. Paterson. One of the most important matters which will come up for consideration is the question of the future home of the amalgamated associations. At present the business will, by kind permission of the Royal Society of Medicine, be conducted for the acting committee at No. 1, Wimpole Street, W.1, where communications may be addressed to the Secretary of the Fellowship, Miss Willis. This arrangement can, of course, only be temporary, and we hope that the larger scheme for providing a home of its own for the amalgamated associations may shortly materialize. Such a central home should comprise not only reading and lecture rooms, but laboratories and command of a sufficient number of hospital wards. The new hospital and institute of the London Tropical School might indeed be taken as a model. As Sir Havelock Charles, the Dean of the School, said in his speech reported last week, combination of laboratory and ward work is essential. If a post-graduate college were established in London on a sound basis we anticipate that it would be eligible to receive a Government educational grant towards maintenance, but it would be essential in the first place that the college should be established. For this a large capital sum will be necessary. The present position affords a great opportunity for some rich man who desires to benefit his kind, for official and medical opinion are thoroughly agreed that medical practitioners should have an opportunity of reviewing their

knowledge from time to time and making themselves acquainted with the development of medicine in all its departments, including laboratory work and special clinics. We earnestly hope that a benefactor willing to identify himself with the scheme may shortly be found.

PATHOMETRY OF INFLUENZA.

We have been favoured with a copy of the minutes of a meeting, on September 19th, of the Subcommittee on Pathometry, appointed by the Influenza Committee of the American Medical Association. This subcommittee, which includes several mathematical statisticians of international reputation, discussed, *inter alia*, the possibility of representing the epidemic curve of influenza by an analytical function, and concluded that no such function, simple in nature and therefore easily applicable, could be found at present. Attention was directed to the fact that many different functions based upon widely different hypotheses gave results indistinguishable one from another. This point was emphasized by Dr. Major Greenwood in his opening paper to the April clinical meeting of the British Medical Association, and is likely to be accepted by most statisticians. The subcommittee thought that the method of multiple correlation would be useful in evaluating some of the factors of epidemicity and scheduled several variables it would be well to study. It was held that the following matters should be borne in mind: (*a*) Explosiveness; (*b*) time distribution; (*c*) aggregate of epidemic damage regardless of explosiveness or time distribution; (*d*) infectivity of the organism at various stages of the epidemic wave; (*e*) virulence of the organism at various stages of the epidemic wave. The importance of these matters is considerable, but it may be very difficult to express variations in a form suitable for quantitative study. It is satisfactory to observe that the value of these studies is as fully recognized in America as it is coming to be in this country.

HEALTH VISITORS.

In the later part of the last century social reformers began to realize that something more than the provision of a pure water supply, efficient drainage, and even the strict administration of sanitary statutes, was required if the sickness rate and death rate of the country were to be lowered. The gospel of individual responsibility began to be preached and laudable efforts were made to instruct the wives of working men in household management and in the care of young children. At first this was carried out by means of mothers' meetings and district visitors. Later came the district nurse, and presently a few sanitary authorities appointed women health visitors. In 1908 sanitary authorities in London were enabled through the London County Council (General Powers) Act of that year to appoint as health visitors women whose duties were to include the giving of advice on the proper nurture, care and management of young children, and the promotion of cleanliness as the basis of health, and to discharge any other cognate duties that might be assigned to them. In 1909 the Local Government Board made regulations prescribing the qualifications which these new officials should possess—a medical degree, a nurse's training, the certificate of the Central Midwives Board, the previous discharge of similar duties under a local authority, or some training in nursing together with a certificate of efficiency after examination by a society approved by the Board. In connexion with this last qualification an examination for women health visitors was established by the Royal Sanitary Institute, by which body nearly 1,500 certificates of proficiency have been granted. The Exchequer grants instituted in 1914 and the enforcement of compulsory notification of births in the following year no doubt stimulated local authorities to appoint health visitors, and considerable experience has been gained with regard to the precise duties they should undertake, and perhaps more important still, what duties they should not. For example, though they may with advantage possess the certificate of the Central Midwives Board, and should have a knowledge of sick nursing, they ought not to act either as midwives or nurses. Similarly a knowledge of sanitation, or even the possession of a sanitary inspector's certificate, is desirable, but the executive duties of a sanitary inspector should not be carried out by a health visitor but by the proper officer. In these circumstances the Ministry of Health has decided that the health visitor of the future shall go through a course of training on certain prescribed lines, and the Board of Education has issued regulations relating to the course. The full course will last two years, and the theoretical instruction is to include elementary physiology, methods of artisan cookery and household management, hygiene, infectious and communicable diseases, maternity, infant and child welfare, elementary economics and social problems. The practical training is to be designed "to illustrate the theoretical instruction and to give the students a first-hand personal knowledge of the various aspects of their future work." It is suggested by the Board than one-half of the student's time should be taken up with practical work. A shortened course of twelve months will be allowed for a hospital nurse with three years' training, a health visitor with three years' service, or a graduate of a university. A student must be at least 18 years of age before entering on the course, and it appears to be the desire of the Board that girls should begin their training at that age, though many competent critics will disagree with this. It is rarely, if ever, that a health visitor is appointed under the age of 25 years; if a girl is qualified at 20, during the intervening five years before she obtains an appointment she will in all probability not only lose enthusiasm but will forget what she has learnt, and—so fast do we advance nowadays—she will be five years behind the times in her methods. This aspect of the case has apparently not been forgotten by the Board of Education, for in a prefatory memorandum to the regulations for training it is admitted that a student who on the completion of her course is only 20 years of age will not in general be sufficiently experienced or mature to take posts of responsibility. It is suggested by the Board that such students may take a further course of training, such as that for the certificate of the Central Midwives Board, or may take posts of limited responsibility in infant welfare centres or elsewhere. Time only will prove the correctness of the Board's anticipation. The regulations are open to criticism in minor details, and, no doubt, opportunity will be taken to amend them in accordance with experience. The objective of the Ministry of Health, assisted by the Board of Education, is admirable, but in the endeavour to attain it too much stress must not be laid upon scientific training or routine methods. It must be remembered that the course of training is for *women* health visitors, whose greatest qualification should be the possession of womanly sympathy and consideration.

FISH ENEMIES OF THE MOSQUITO.

Hildebrand (Public Health Reports, United States Public Health Service, May 23rd, 1919), from numerous experiments and observations made at Augusta, Georgia, for the United States Commissioner of Fisheries, at the request of the Public Health Service, draws the following conclusions: The top minnow (*Gambusia affinis*) is especially suitable for antimosquito work because (*a*) it seeks its food at the surface; (*b*) it is very prolific; (*c*) it gives birth to well-developed young, and therefore requires no special environment for depositing and hatching the eggs; (*d*) it lives and thrives under a large variety of conditions, and frequents areas especially suitable for the support of mosquito larvae; (*e*) it usually lives and multiples in ponds

stocked with predaceous fishes, provided it has very shallow water for refuge. Plants which have slightly submerged leaves and stems, or which form floating masses, are the chief sources of protection for mosquito larvae against the top minnow. Such plants should be removed from the water, or so treated as to make them uninhabitable for the immature mosquito. Grasses and rushes, and other plants having straight stocks and no slightly submerged leaves, furnish no protection, and the smart-weed (*Polygonum*) would appear to be even repellent to mosquito larvae. Algae often form mats which float on the surface, and in which mosquito larvæ can develop unless they are sprayed with oil; in this case the alga pods act like sponges, retaining the oil and making them uninhabitable for the mosquito. The top minnow eliminates the wriggler from ponds fairly free from protective vegetation and débris. The number of fish required depends largely on local conditions. One adult female was observed to eat 165 large larvae in less than twelve hours, and Seale, working with this fish in the Philippine Islands, reports that one pair of half-grown *Gambusia* ate 5,041 mosquito larvae, by actual count, from December 9th, 1915, to February 25th, 1916. As regards other species of fish, Hildebrand considers the "star-headed minnow," *Fundulus nottii*, and the roach minnow of considerable value; the goldfish, although useful in aquaria, is probably of little effect in large bodies of water when other food is obtainable. His observations indicate that several species of sunfishes are of doubtful assistance in antimosquito work, since one large pond supplied with bream, warmouth, and the blue spotted sunfish supported large numbers of mosquito larvae of both types, and top minnows had to be introduced in order to secure mosquito control.

HIPPOCRATES ON HEAD INJURIES.

Hippocrates had in the highest degree the wonderful capacity of the Greek mind of separating essentials from accidentals. Matthew Arnold in speaking of Thucydides describes this as a "tendency to observe facts with a critical spirit, to search for their law, not to wander among them at random." Newton said of himself *Hypotheses non fingo*, and the Father of Medicine looked at the facts of disease with eyes unclouded by superstitious fancies or mists of theory. Much of his teaching is as valid now as it was when delivered to his disciples in the island of Cos in the fifth century before Christ. In the handling of fractures and dislocations he has been placed by modern authorities on a level with Dupuytren, and Littré praised his work on the joints. Max Neuburger[1] says that Hippocrates discussed the diagnosis and treatment of dislocations and fractures, and particularly of injuries of the head, in a masterly manner. The Hippocratic aphorism—that no injury of the head is trivial enough to be neglected or too grave to be accounted desperate—received many illustrations in the recent war. Dr. L. Pron of Algiers has lately given[2] a useful summary of the teaching of Hippocrates on injuries of the head. He distinguished five varieties of fracture: (1) Fissure of bone with contusion of soft parts, the line of fracture in some cases being so narrow as to be scarcely visible; (2) simple contusion; (3) depression of the skull as well as fracture, when the membranes are unhurt the depression is less dangerous; (4) a penetrating lesion of varying depth may accompany the fracture; (5) fracture by contrecoup. The surgeon was told to find out by exploration with the finger whether or not the bone was denuded; if this method failed, he was to use a probe to determine whether there was penetration, depression, or other lesion. When no definite information could be obtained the wound was to be dressed with the "black medicament," which was soluble; a piece of linen soaked in oil was applied and then a poultice of barley paste. On the following day the dressing was to be removed, the wound cleaned, and the bone scraped with the raspatory. The uninjured parts would be found white, but the fracture and contusion would be stained by the medicament. The raspatory was then applied deeply, and if the blackness did not disappear, the case was one of complete fracture. When no lesion was found and the skull was left to itself fever supervened, and with its establishment a little fluid escaped, the wound became discoloured and viscous, and had the appearance of salted meat. The bone from that time began to mortify, suppurating phlyctenulae formed on the tongue, and the patient died in delirium. It was noted that generally one-sided convulsions occurred, and that if the wound was on the left side the right side of the body was affected, and vice versa. Hippocrates directed that as soon as fever came on the bone should be trephined down to the membranes or scraped, and the patient treated thereafter according to symptoms. For fracture by contrecoup nothing could be done, as neither its existence nor its situation could be recognized. In penetrating lesions the parts were to be scraped, and if the lesion was found to be complicated by fracture the surgeon was to trephine, taking care not to injure the membrane; the trephine was to be applied where the bone appeared thickest, and was to be looked at often to see where it was, and an attempt made to lever up the bony fragment so as to detach it. Hippocrates warned the surgeon against reckless interference with the temporal region lest convulsions and palsy should occur on the opposite side of the body. An incision to ascertain the condition of the bone was to be free, the flesh was to be detached where it was united to the pericranium, and a tent placed in the wound, over which should be applied a poultice composed of fine barley flour pounded in vinegar and cooked to make it sticky. When, although an erysipelatous swelling appeared on the face and eyes the wound continued to look healthy, the prognosis was said to be hopeful; purgatives should be given, care being taken not to weaken the patient. Although Hippocrates was ignorant of antisepsis, his teaching on the treatment of wounds must, as Littré[3] says, be studied with deep attention; for his writings are founded on a wide experience, minute and profound observation, and an enlightened and infinitely cautious judgement.

[1] *History of Medicine*, translated by Ernest Playfair. London, 1910, p. 156.
[2] *Paris méd.*, August 2nd.

AN AMERICAN CRITIC OF NATIONAL INSURANCE.

An "occasional lecture" was delivered at a meeting of the Royal Society of Medicine on October 23rd by Mr. Frederick L. Hoffman, LL.D., of New Jersey, on the subject of national health insurance. The chairman, Sir Humphry Rolleston, in introducing Dr. Hoffman, said that he was the statistician of one of the large insurance companies of America, and vice-president of the American Statistical Association; he had been for two months in this country studying the methods and results of our national insurance system in various representative areas. Dr. Hoffman's address was a thorough-going denunciation of the whole principle and machinery of national insurance. Apparently he had been unable to discover a single redeeming feature, save the excellence of the type of civil servant engaged in insurance administration. He said that the Act was a misconceived piece of legislation. It did not promote health or even intelligently co-ordinate health administration; it was in no sense preventive; it was simply a method of social amelioration. Dr. Hoffman made a particular attack on that famous definition which is at the basis of medical benefit: "such treatment as is of a kind which can, consistently with the best interests of the patient, be properly undertaken by a general practitioner of ordinary professional competence and skill." He held that the effect of this was to standardize mediocre practice. He had seen scores of insurance

[3] Quoted by Allbutt: *The Historical Relations of Medicine and Surgery*, London, 1905, p. 9.

patients dealt with in a manner which he could only describe as "lightning diagnosis." The time given to each patient in some instances had averaged two and a half minutes. The vast majority of illnesses which came within medical benefit, as was shown by an examination of representative lists, were minor maladies of about one week's duration. Under proper economic conditions the patients should in such cases pay for any medical assistance they required, and any State scheme should be reserved for dealing with the really serious cases, with which the existing scheme did not deal at all adequately. He gave some data which he had obtained in Manchester showing that 85 per cent. of the attendances there were at the surgery and only 15 per cent. were domiciliary visits; also that out of a million attendances only 133 were for surgical operations. He also criticized the general methods of prescribing, and stated that some thirty drugs would cover 80 per cent. of the prescriptions. Sanatorium benefit, save in a few areas, was wholly insufficient; while maternity benefit, the most popular feature of the Act, had, properly speaking, no business there at all, but should be administered through the maternity and child welfare centres. Dr. Hoffman believed that the Insurance Acts would be supplanted very soon by a State medical service. He had spoken to a hundred well-known people engaged in administration, and with the exception of those who belonged to the medical profession, the general judgement was in favour of a State medical service of universal scope, not discriminating even in favour of the necessitous poor. Such a State service he believed to be imminent. Sickness benefit would then be administered by the Ministry of Labour, and sanatorium benefit would be the province of a public health department. Altogether, he saw no justification for the Insurance Acts, and he suggested that the setting up of national insurance in this country was due to a deep-laid plot on the part of Germany, who, having got a similar incubus on her own shoulders, saw to it, by an insidious propaganda, that her rival was similarly handicapped!

THE FIRST BRITISH MEDICAL ASSOCIATION LECTURE.

THE first British Medical Association lecture under the scheme adopted by the Council on the recommendation of the Science Committee was given by Dr. Thomas Lewis, F.R.S., on October 24th at Sheffield. His subject was "Cardinal principles in cardiological practice." The lecture was a good example of the application of scientific investigations by a master of his subject to problems of everyday practice. It was listened to with great attention by a large audience, and will be published in full in an early issue. Dr. A. E. Barnes, Chairman of the Division, presided, and Dr. A. J. Hall, in proposing a vote of thanks to Dr. Lewis, congratulated the Association on having inaugurated the scheme of lectures, and went on to pay a warm tribute to the work of Dr. Lewis, who, he said, was not only a master of research but a most lucid teacher. Dr. A. M. Pilcher (D.C.M.S. Sheffield Area, Ministry of Pensions), in seconding, referred to the investigations and writings of Dr. Lewis on the subject of soldier's heart, and spoke of the valuable help which these had been in the work of the Military and Pensions Boards. Sir Thomas Horder has accepted an invitation to give a British Medical Association lecture to the Southern Branch at Southampton on November 13th. The lecture will deal with the preventive treatment of influenza.

THE HOUSING QUESTION.

IN his report for 1918 the medical officer of health for the City of Birmingham, Dr. John Robertson, calls attention to some sinister facts respecting the housing conditions of the great Midland city. In 1913 there were 43,366 back-to-back houses in Birmingham, housing nearly 200,000 persons—a population equal to that of the city of Cardiff. In six wards, all in the central area, from 51 to 76 per cent. of the houses were of this kind. During the period 1914–18 four of these wards had a general death rate of more than 19 per 1,000; five an infant mortality greater than 134 per 1,000 births; three a measles death rate above 0.56; five a death rate from pneumonia and bronchitis above 3.63; five a phthisis death rate above 1.63; and five a mortality rate of over 29 per 1,000 births for deaths at ages under 2 from diarrhoea and enteritis. As a control we may take King's Norton, with less than 8 per cent. of back-to-back houses. The death rate here from all causes is less than 10.9, the infant mortality less than 78, the measles mortality less than 0.12, the bronchitis and pneumonia rate below 1.62, the phthisis rate below 0.89, the diarrhoea and enteritis figure below 9. Dr. Robertson is aware that some of the inhabitants may be shiftless and criminal, unfit to thrive in any environment; he is also aware of the fact that "it is impossible to imagine a rising generation of young people being able to improve in health or self-respect, even if the best of educational facilities are provided, when everything they come in contact with is sullied by dirtiness and squalor." In his opinion the only remedy is the replacement of these slums by decent houses in a pleasant environment. Publications such as this are of great value. Even in these days of specialist education there may be left one or two readers of Matthew Arnold who will remember how he quoted the dithyramb of one of our political strong men, Mr. Roebuck, on the amazing prosperity of England. Roebuck asked his audience "whether, the world over or in past history, there is anything like it?" Arnold demurely quoted the report of a child murder in Nottingham—the perpetrator, a girl named Wragg, being in custody—and pensively repeated Roebuck's question, adding, "*Wragg is in custody.*" We, too, may add as a refrain to the speeches of our strong men in praise of our national exertions and prophesying a new heaven and earth, this sentence: *In the city of Birmingham 200,000 persons live in back-to-back houses.*

CAMBRIDGE is easily able to provide ample accommodation for all the activities of the Annual Meeting, which will be held there at the end of next June. The address by the President, Sir Clifford Allbutt, will be given in the Senate House on the evening of Tuesday, June 29th. The annual Representative Meeting, which will begin on Friday, June 25th, will be held in the Examination Hall of the University Buildings, Downing Street. The Council meetings will be held in a smaller room in the same buildings. The sections also will meet in these buildings, and the exhibition will be held in the Corn Exchange. The reception room will be established in the Guildhall, and there will be reading and writing rooms in the Guildhall and Union Club.

Medical Notes in Parliament.

PARLIAMENTARY interest has been centred chiefly in the preparations for the debate on national finance, though the defeat of the Government on the clause of the Aliens Bill dealing with pilots afforded a tragi-comic interlude.

Milk.—In reply to Colonel Burn, Dr. Addison said that local authorities were given power, subject to any necessary restriction imposed by the Food Controller in times of shortage, to supply milk for expectant and nursing mothers and children under five at cost price or less, according to the circumstances of the case, and he had recently impressed on local authorities the importance of exercising their powers in this respect fully. Arrangements could be made through the food control committees for priority of supply in the case of sick persons and young children, if necessary, but he was informed that the supply of milk was considered fully adequate.

Hospitals.—In reply to Sir A. Warren, Dr. Addison said that he was aware of the financial difficulties of many of the voluntary hospitals and recognized that they affected the proper provision of the various forms of medical services in hospitals and in centres or clinics, and otherwise, but he was not yet in a position to make a statement.

MEDICAL CONSULTATIVE COUNCIL.

We have received the following official announcement from the Ministry of Health:

The first meeting has been held of the Consultative Council appointed by the Minister of Health to advise on questions relating to medical and allied services. Sir Bertrand Dawson is the Chairman and Colonel C. J. Bond of Leicester the Vice-Chairman of the Council. There was a full attendance of members, and Dr. Addison opened the proceedings as President of the Council.

After welcoming the members of the Council, Dr. Addison said that he was sure that the experiment which he was making in bringing a body of this kind into close touch with the work and plans of the new Ministry would be justified by results. Their main duty would be to advise him on questions of policy in the formative stage. They would thus be brought into the counsels of the Minister before decisions were taken, and if their advice was to have full weight the confidential character of their relations with the Minister must be respected. At the same time he had to remember that the Council must be put in a position to keep him in touch with the medical profession throughout the country, and to help him to carry the profession with him in the policy which he adopted. Therefore, he did not propose that the whole of their work should be conducted in secret. He had agreed with Sir Bertrand Dawson that periodical statements should be issued to the press of the nature of the problems referred to the Council, and of the progress made with their deliberations, and he hoped that this arrangement would encourage discussion and criticism. He asked the Council at once to consider a reference which would enable them to tell him what in their view should be the ideal system of medical and allied services towards which the Ministry should work. Obviously this was a vast subject, and he would leave them completely free to consider its various aspects in order of urgency, and to report to him at different stages of their work if they thought fit. He was looking to them for substantial help in shaping policy, and their chairman would have direct access to him for the purpose of conveying advice and suggestions. They might rely upon his cordial co-operation and that of his departmental advisers, both medical and lay, in carrying out their task, and under Sir Bertrand Dawson's chairmanship he felt confident of their success.

Sir Bertrand Dawson, after thanking Dr. Addison for his cordial reception of the Council, said that in bodies of this kind he saw a new instrument of government full of possibilities. The growth of knowledge and the necessity for securing public confidence in proposals which closely affected large sections of the population had made the development of some such organ of communication inevitable. This did not mean that departmental advice was not good, but that it needed supplementing from new sources. The Consultative Councils were an experiment devised to meet this need. The problems referred to them would tax their powers to the full, and in feeling their way to the best methods of working they would welcome and rely upon that co-operation which they were promised by Dr. Addison and his advisers. In his opinion the activities of the Ministry of Health were bound to extend, and to affect all branches of medicine more and more closely. If the results were to be satisfactory a good understanding and close co-operation with the medical profession must be maintained throughout. He hoped that the profession would find in the Council a new link with the Minister. They would not displace any existing organization in the counsels of the Ministry, but would endeavour to represent the views of all sections of the profession. He was deeply conscious of the honour conferred upon him by the Minister's invitation to act as Chairman of so distinguished a body. The responsibility was a heavy one; but with the help of his colleagues and the support of Dr. Addison and his advisers he did not doubt that they could take an effective share in the shaping of the new policy which the Minister of Health had been appointed to carry out.

Dr. Addison then asked Sir Bertrand Dawson to take the chair, and after making arrangements as to future procedure the Council held a preliminary discussion of the principles to be observed in the future developments of medical and allied services upon which the Minister had asked them to advise.

The Massachusetts Department of Health celebrated the fiftieth anniversary of its establishment on September 13th. Among the speakers were Professor W. H. Welch and Sir Arthur Newsholme.

England and Wales.

Cardiff Medical Society.

The first meeting of the winter session of the Cardiff Medical Society was held in the society's rooms on October 14th. Mr. A. W. Sheen delivered the presidental address. After thanking the members for electing him, and particularly for their expressed desire that he should retain the post after he had moved to London, he gave details of the society's war service, and reminded the members that theirs—the oldest medical society in Wales—was this session entering upon its jubilee, having held its first meeting on February 14th, 1870. Of its seventeen original members none now remained alive. The society was up to date in its earliest activities, for at its first meeting was shown a case of bullet wound of the elbow which recovered after operation with complete movement of the joint, while at its second the question of sending delegates to a meeting of the "Reform Union" in London was discussed.

Mr. Sheen then spoke of the Welsh Hospital in India. This hospital, No. 34 (the Welsh) General Hospital, was mobilized at Aldershot in April, 1916, the medical and nursing staff being found by Wales, the nucleus being furnished from the Welsh Hospital, Netley, and after being destined for France was sent to the East, and eventually established in Deolali in the Western Ghats, 130 miles from Bombay, and enlarged to 3,000 beds for British troops, being the first British general hospital in India. The hospital, and its organization until it was complete in all departments, were described and illustrated by photographs. Mr. Sheen then spoke of his work as consulting surgeon in India subsequent to his relinquishing the command of the Welsh Hospital, and after a brief reference to his surgical experiences gave short descriptions of the salient features of various tropical diseases he had seen.

These included *Plague*, in which the necessity for a better education of the people was particularly emphasized. *Cholera:* The urgency of the treatment and the life-saving methods of Sir Leonard Rogers with intravenous hypertonic saline, and oral permanganate of potash. *Malaria:* The great value of drainage and the efficacy of prophylactic quinine. *Leishmaniasis:* Kala-azar, known by remittent temperature, enlarged liver and spleen and leucopenia; and oriental sore, which when excised is microscopically like epithelioma; both forms of leishmaniasis are curable by intravenous antimony; the sore is also curable by a vaccine as shown by Dr. Row. The occurrence of a flagellate in plant juice resembling the flagellate form of the Leishman-Donovan body was described and illustrated. *Kangri cancer:* The Kashmiri keep themselves warm during their very cold winter by hugging to the abdomen under the clothes an earthenware basket-covered receptacle containing hot wood-ash known as a kangri. Cutaneous cancer of abdomen and sometimes of the thighs (from squatting) results. Mr. Sheen described cases from observations afforded and details kindly given by Dr. Ernest Neve. *Oriental bubo:* Enlargement and breaking down of the inguinal glands; seen in British patients; no avenue of infection found; removed tissues reported sterile. *Guinea-worm infection:* The means of treatment and the dangerous cellulitis resulting from the breaking of the worm in the tissues were particularly alluded to.

The remainder of the address included references to dysentery—carriers amongst the general population; typhoid—question of the value of gall bladder drainage in carriers; leprosy—the orange-like skin and the remarkable enlargement of the nipples; scurvy—the diagnosis of scurvy haematomata; heatstroke—the nature of the disease; bilharziosis—curable by intravenous antimony; and the mention of various other tropical maladies seen by the speaker.

Dr. D. R. Paterson and Dr. Ewen Maclean proposed and seconded a vote of thanks, and referred, as did Mr. Sheen in reply, to the increased sphere of work opening to the society with the resumption of its full work, interrupted by the war.

Liverpool Medical Institution.

The inaugural meeting of the eighty-first session of the Liverpool Medical Institution took place on October 23rd, when the president, Mr. W. Thelwall Thomas, delivered an address on "The evolution of the surgeon and his training." There was a large attendance of members, and among the visitors was the vice-chancellor of the university, Dr. J. G. Adami. Mr. Thomas treated the subject historically, beginning with the earliest records and ending with the standard of equipment that should be required to-day. He drew attention to the fact that many of the appliances and instruments used even in the earliest

days had not undergone much alteration. The principles of the art were there, even though the science of surgery was in its infancy. The progress of surgery received a great impetus from the discovery of the microscope and its application to the elucidation of disease. Surgery benefited immeasurably from the germ doctrine of disease, and with the introduction of anaesthesia became able to treat disease successfully in a manner undreamt of by our forefathers. Operation did not now present the same terrifying aspect to the general public as it did even thirty years ago. He recalled the fact that, when a house-surgeon, the only time he saw the abdomen opened was when ovariotomy was performed. In his concluding remarks Mr. Thomas expressed the opinion that the future surgeon should spend more time on handicraft. He should have performed operations on the living subject under skilled supervision before presenting himself for the final examination in surgery. More time should be devoted to practical classes and less to systematic lectures, which, owing to the excellent surgical manuals, were no longer necessary. The address was received with much applause, and a vote of thanks, proposed by Professor Rushton Parker and seconded by Dr. E. W. Hope, was carried unanimously. Afterwards the president entertained the members to supper, and an excellent programme of music was provided. Dr. Livsey was accompanist, and Mr. Walton Hatton, 'cellist, charmed the audience with his brilliant playing.

Annual Medical Service in Liverpool.

This service took place at St. Luke's Church on Sunday afternoon, October 26th. There was a good congregation, but only few medical men were present in academic dress. The Bishop of Warrington (Dr. Martin Linton Smith, D.S.O.) preached the sermon, taking for his text St. John, xvii, 3. In a thoughtful exposition the preacher set forth the limitations of human knowledge. The material view failed to account for the phenomena of life, which could not be solved in terms of mechanical or biochemical knowledge. He emphasized the spiritual claims on man's life. The Bishop of Liverpool read the lesson and bestowed the blessing. The offertory, for the Royal Medical Benevolent Fund, amounted to £55 16s. 1d. The honorary treasurer, Dr. J. Ernest Nevins, 32, Princes Avenue, mindful of the fact that many medical men were unavoidably prevented from being present, will be pleased to receive their contributions to the fund.

Scotland.

Edinburgh Medical School.

Two of the occupants of new chairs in the Medical Faculty of the University of Edinburgh gave inaugural addresses during last week. Professor Barger, the new professor of chemistry in relation to medicine, dealt with the connexion of chemistry and medicine in the past, and gave instances of the great advantage both pathology and clinical medicine had derived from the introduction of suitable methods of analysis. The functions of a university were twofold—to impart knowledge and to extend it, and it seemed to him that in Edinburgh teaching had sometimes been developed at the expense of research. Professors had often been too much occupied in lecturing and administrative work to do justice to themselves as original investigators. Professor Meakins, the first occupant of the Christison chair of therapeutics, devoted his inaugural address to a discussion on the influence of Edinburgh on McGill University and American medicine. He recalled that James McGill had been born in Glasgow 175 years ago and received his early training and education in Scotland. He went to Canada as a young man, and when he died in Montreal, in 1813, set apart his estate on the slopes of Mount Royal, together with a sum of £10,000, for the foundation of an English-speaking university, one of the colleges of which was to be called McGill. The Montreal Medical Institution—an active teaching body, representing the first attempt at medical education in Canada, officered by men coming from the Edinburgh school—became the medical faculty of the university. They had brought with them the Edinburgh methods of medical teaching, and from its very origin down to the present time the McGill medical school has continued on the foundations then so truly laid. Persistence and faith carried them through a protracted struggle, during which they were joined by other Edinburgh graduates. In fact, in the last one hundred years there had been few exceptions to break the steady line of Edinburgh and McGill men occupying chairs at McGill medical school.

At the meeting of the Edinburgh University Court on October 20th it was reported that the University would shortly obtain possession of the new site near Blackford Hill, and it was decided to proceed at once with the erection of the first part of a new chemical laboratory. It was estimated that the cost of the portion now to be begun would be £60,000; the total cost of the new chemistry school, when complete, will be about £250,000.

Dinner and Presentation to Dr. G. C. Anderson.

On October 22nd his fellow practitioners in Fife gave Dr. Anderson a dinner and presentation of silver plate, on the occasion of his departure for London to take up the duties of Deputy Medical Secretary of the British Medical Association. Thirty-three sat down to dinner, one of the largest gatherings ever held. In proposing Dr. Anderson's health and making the presentation to him, Dr. Douglas said that a meeting of his fellow practitioners was inevitable. So friendly were the relations between Dr. Anderson and his colleagues in the county, and such were his surgical attainments and the interest he took in the profession in the area, that his removal to his new sphere of duties was a loss to the district. As members of the Fife Branch of the British Medical Association, of which Dr. Anderson was the honorary secretary for ten years, it was a source of sorrow when they saw his appointment as Deputy Medical Secretary to the Association; but at the same time it made Fife feel prouder of itself than ever. He could only compare Dr. Anderson's appointment to the promotion of a junior officer to be D.A.Q.M.G. at G.H.Q. The troubled times they were passing through and which were ahead were reflected in the profession, and this was the time when of all times a *man* was needed in the position Dr. Anderson had been chosen to fill. The Englishman was a sportsman, and did not mind that Scotsmen should be appointed to heads of departments in England. If they had been asked for their selection, with one accord those who knew Dr. Anderson would have said, "Try Anderson, Denbeath; he's the man for you." His appointment had placed Dr. Anderson in the position of second in command of the permanent officials of the British Medical Association.

In reply Dr. Anderson said he had always worked on the most friendly terms with his fellow members, although his views were often in direct opposition to those of many. He corroborated the fact previously mentioned of the influence which Fife had always exerted in the Association, notably with regard to the defence fund in 1912; and he stated that he meant to uphold the views he had always given voice to as secretary of the Fife Branch.

An extremely pleasant evening was spent, a fitting close to a decade of much hard work for the benefit of the Association in Fife.

General Medical Council Election.

Dr. Dewar closed his campaign in this election last week by addressing meetings at St. Boswells and Stirling. Dr. Dewar based his claims for election on the following grounds:

1. That the 1886 Act was passed for the purpose of enabling the general profession to elect one of themselves as their direct representative.
2. That Scotland had not been represented by a general practitioner since 1906, and the 1886 Act had thus been a dead letter in that country for thirteen years.
3. That he is a general practitioner in active practice, and has been strenuously engaged for the last seventeen years or more in furthering the interests of the profession.
4. That it is now time for the general profession to assert itself and take its share in the control of the general education of those proposing to enter the medical curriculum, and in the medical education of students qualifying for registration as medical practitioners, by returning one of themselves to the Council.

Dr. Ebenezer Duncan addressed a meeting of the profession in Edinburgh on October 21st, when Emeritus Professor Caird was in the chair. Dr. Duncan criticized the constitution of the new Board of Health, and added that it would in the course of a short time take up the question of increasing hospital accommodation, which was very inadequate; but it was for the medical profession to guide the Board with regard to the kind of hospitals which should be established. The appointment of a registrar of public assistance would put a stop to hospital abuse. He thought it would be a calamity to the public and to the profession to have compulsory medical service. Dr. Duncan also held a meeting in Glasgow on October 23rd, with Dr. Freeland Fergus in the chair, when a motion favouring his candidature was unanimously adopted.

Dr. Norman Walker held a meeting at Kilmarnock on October 23rd, in which he dealt especially with educational matters, and observed that the most important thing from the point of view of practitioners in Scotland was the raising of the standard of preliminary examination agreed upon by the Scottish universities.

Glasgow Housing Exhibition.

An elaborate housing and health exhibition, displayed in the Kelvin Hall, Glasgow, has attracted a very large number of visitors, who have had the opportunity of seeing model cottages and of comparing them with the insanitary conditions of Glasgow slums. Dr. A. K. Chalmers, M.O.H., has published in the *Glasgow Herald* an essay on the medical aspects of the exhibition. He points out that efforts to deal with the housing problem have been on foot for several generations, and in Glasgow date back to the outbreak of cholera in 1848. In the earlier stages the difficulty was to prevent the erection of new slums when the demolition of the old was carried out. He showed by statistics that the death-rate in families living in one apartment was much higher than in those living in three or four, so that the size of the houses must be included along with the external environment as one of the conditions influencing the health of its occupants. In conclusion, he pointed out that the changed circumstances of the day had expanded the meaning of the phrase "housing reform" to one which implied an actual shortage of houses. During the last fifteen years or so the supply of new houses had fallen off. It began, he says, to wither before the war, for reasons which require the closest attention of the economist, and almost absolutely ceased during its continuance. Further, the present need for houses rests, on the one hand, on the legacy of insanitary areas, and, on the other, on the almost complete absence of the annual output of houses. The Glasgow Corporation has approved the draft scheme of the special committee on housing and general town improvement.

Colliery Surgeons' Committee.

A conference was held in Glasgow on October 16th, under the chairmanship of Mr. John Robertson, M.P., between the Colliery and Public Works Surgeons' Committee and the Executive Committee of the National Union of Scottish Mine Workers. The object of the conference was to consider the remuneration of medical men in colliery and industrial districts in Scotland. Dr. Goff of Bothwell, chairman of the Surgeons' Committee, made a statement defining the position taken up by the surgeons, and supporting the request made to the Mine Workers' Union last April for an increase in the scale of fees. The Surgeons' Committee, it was stated, were in a position to speak for the members of the medical profession concerned throughout Scotland, and were prepared to arrange an agreement at once. The miners' executive, however, stated that they could not conclude an agreement without first submitting the matter to the district unions. It was agreed that this should be done at once.

Edinburgh Maternity Hospital.

Drs. William Fordyce and J. Lamond Lackie have been appointed physicians to the Edinburgh Royal Maternity and Simpson Memorial Hospital to fill vacancies caused by the retirement, on completion of the usual period of service, of Drs. F. W. N. Haultain and J. W. Ballantyne. Dr. Ballantyne, as already reported, remains in the service of the hospital in charge of the ante-natal work with which his name has so long been associated

Correspondence.

CREMATION AND MEDICAL FEES.

Sir,—Cremation as a method of disposal of the dead has strong recommendations in its favour from the point of view of preventive medicine, and, as stated by Mr. H. T. Herring in his letter to you in your issue of October 25th, 1919, cremation is becoming more general in this country. The question of medical fees for a cremation certificate should give rise to no difficulty. It is obvious that the fair and proper fee would be that of an ordinary professional visit, as stated by Mr. Herring.

The Cremation Act, 1902, necessitated the giving of two medical certificates, each of which certifies that death has actually occurred, and that there is no external evidence to show that death was other than natural. The system of death certification under the Cremation Act is much more satisfactory than the present system of death certification for ordinary burials.

Attention has been called on several occasions to the defects of the present system of death certification in this country for ordinary burials; for example, in 1910 the Departmental Committee appointed to inquire into the law relating to coroners recommended that a certificate of death should not be accepted from a medical man unless it states that he has by personal inspection of the body satisfied himself as to the fact of death. At present he may certify merely on the information given by relatives. The committee also recommended that in every case when a medical certificate is not given the death should be reported to the coroner in order that a proper inquiry should be made.

Under present conditions the law makes no safeguard against premature burial or the concealment of crime. The cremation certificates give adequate safeguard in both these respects, and on this account will be commended by the medical profession.—I am, etc.,

London, W., Oct. 29th. W. H. Willcox.

Sir,—Mr. Herring asks for an expression of opinion on medical fees for signing cremation certificates. He does not seem to distinguish between the medical men signing Parts B and C. In the one case it is more or less the signing of a death certificate by a doctor attending a case, and as such might call for a fee such as Mr. Herring suggests. In the other case the medical man signing occupies an official position under the Cremation Act and acts in a semi-judicial capacity, and it can only be done by the M.O.H. or divisional surgeon, who has first to interview the doctor signing Part B, and then has to visit the house of the deceased, often at an inconvenient time, examine the body of the deceased, and hold a sort of inquiry into the death, interviewing one or more relatives separately and also those in attendance during the illness, and then has to make his report. For this I have, as divisional surgeon always charged one guinea fee, but am doubtful if this is adequate at the present time.—I am, etc.,

A. Dumville Roe, M.B.Cantab., M.R.C.S.

Putney, Oct. 26th.

CHILD WELFARE AND OPERATIONS FOR TONSILS AND ADENOIDS.

Sir,—The recent interesting discussion on the subject of "a death under an anaesthetic," in the columns of the Journal, emphasizes not only that anaesthesia during tonsil and adenoid operations is not devoid of risk, but also that the operation itself, even in the most competent hands, is not devoid of danger and complications, immediate and remote.

The public, and I fancy also a good many practitioners, have come to regard the operation as one of a trivial nature; this may be explained by the frequency of its performance and the high standard of technical skill displayed as the result of constant practice.

But is the operation of such a trivial nature? The children requiring it are often of poor physical development and in delicate health. Haemorrhage at the time of the operation may be severe, even in tonsillotomy, while in the case of enucleation, if the tonsil is adherent, it may prove a difficult and dangerous procedure.

Of the later complications reactionary and secondary haemorrhage are occasionally met with, and ear complications, such as acute purulent otitis media and acute mastoiditis, are by no means uncommon in hospital practice. In the course of seventeen years as surgeon to the Queen's Hospital for Children, I can recall quite a number of cases of acute mastoiditis arising after operations for tonsils and adenoids, on which I have been called to operate, and on several occasions I have had little patients admitted into my wards suffering from profound anaemia following haemorrhage.

This leads me to the point of my letter, whether the present arrangement of operating on large numbers of children in the out-patient departments of hospitals and sending them to their homes soon after they have recovered from the anaesthetic is really the best method of dealing with them. Let me put the matter in another way: Would any surgeon have his own child operated on in the manner described and sent home, or would any surgeon do the operation for a private patient under similar circumstances unless compelled? I have no doubt as to the answer, and yet these children are sent to their homes without inquiries as to what kind of a home it is; many of them are overcrowded, dirty, and quite unfit from a hygienic point of view for the convalescence of a case with a large raw surface in the throat. To my mind the wonder is that ear complications are not much more frequent. The exigencies of hospital practice are responsible for the method, as it is only possible to retain in hospital those cases in which some complication has arisen during the operation.

What is the remedy? I would suggest that with the establishment of infant welfare centres, school clinics, and treatment centres, some provision should be made for their convalescence in suitable surroundings. If some such arrangement could be made the children would have the advantage of good nursing and appropriate feeding, and the hospitals would be to some extent relieved of their congestion.—I am, etc.,

Douglas Drew,
Consulting Surgeon to the Queen's Hospital for Children, Hackney.

London, W.1, Oct. 13th.

SCHOOL MYOPIA.

Sir,—Myopia surely has more than one cause. Almost certainly some cases are congenital. How else can myopia —7 sph. with —3 cyl. at 6 years, or —10 sph. with —1 cyl. at 9 years of age be explained? Almost certainly also some cases of myopia result from eye-strain, uniocular myopia developing from emmetropia or hypermetropia, the other eye being in compound hypermetropic astigmatism. It is rational to believe, though clinical proof be absent, and should be absent, that hypermetropic astigmatism uncorrected may become mixed astigmatism.

Though actual proof, by the nature of the case, be absent, by analogy tension, eye-strain, may justifiably be considered the part cause of myopia, as varices result in veins abnormally weak in resistance from normal intravascular pressure.—I am, etc.,

W. Campbell M'Donnell, M.R.C.S.

London, N., Oct. 20th.

THE CAPITATION RATE.

Sir,—During the next week or two Panel Committees will be engaged on the most important work they have ever had to do on behalf of the material interests of the profession—that of (1) ascertaining the views of the individual working practitioner throughout the country as to his proper remuneration, and (2) of instructing their representatives at the November Conference as to the capitation fee they should demand of the Government for the work of the next three years.

Obviously this demand must be a considered one, arrived at scientifically and capable of being logically maintained in the face of opposition.

In document M. 22 the Chairman of the Insurance Acts Committee sets out the problem and the best ways of solving it clearly and lucidly, as he invariably does, but we may admire the method without accepting the data or agreeing with the conclusion; and I cannot help thinking that if either the Conditions of Service Subcommittee or the full Committee had had time to consider the document at leisure, or even to read it as a whole, before adopting it, they might well have decided, after checking and amplifying both the data and the arguments, to have left the Panel Committees and the Conference free and uncommitted to arrive at their own conclusions as to the figure to be named. I trust even now that the lead of the Insurance Acts Committee will be ignored, and each practitioner will think out the problem for himself and arrive independently at his own result.

The following notes may be of assistance:

1. "*Basic Fee*" *of 7s. 6d. or Average of 7s. 3d.*—This was arrived at in 1912 before it was known what amount of attendance would be required. We now know that the average is approximately three consultations and one visit per year. For payment by attendance the Commissioners fixed the fees at 2s. a consultation and 2s. 6d. a visit. At this rate the basic fee should be 8s. 6d. On this the calculation in paragraph 19 of M. 22 works out at 16s. 2d.

2. *The Factor of + 60 per Cent. for Changing Old Value of Money into Present Value* (paragraph 11).—This may be right or wrong, but should not be accepted without examination. Let the problem be referred to an accountant—say Sir Woodburn Kirby, the independent Chairman of the Distribution Committee—and his award agreed to beforehand.

3. *The Working Year of Eight Hours a Day for 300 Days.*—That is, six full days a week with thirteen days' holiday, including Christmas, Easter, Whitsun, and Bank holidays. The working year of the higher ranks of the civil servant is, I think, seven hours a day, a half-holiday on Saturdays, and forty-two days' full-pay leave. (They work overtime for nothing; this is a wrong.) When we go on leave we have to pay eight guineas a week and his board to our locum. The length of the working year is important, as it obviously affects the calculation of the fraction three-eighths.

4. *The £1,800 a Year Gross Income Present Day Value for a Successful Middle-aged Man.*—This is a pure guess, though possibly not a bad shot. Why not base the gross income on the pay, present day scale, of a medical officer of the army or navy? At age 45 a medical man in the navy would have, say, twenty years' service, and be a surgeon commander of six to seven years' seniority as such. His pay would be £967 5s. a year, with free board, lodging, and service, valued by the Admiralty (in allowances) at £210—total £1,177 5s. The present value of the pension (£515) to which he is entitled, at 5 per cent., is £4,757, which will give him and his heirs an income of £237 16s.—total £1,415 a year. And I believe there is in addition the value of a small pension to his widow, which I will not attempt to estimate, but which must not be forgotten. His income being *net*, we must add one-third for the expenses of a non-dispensing practitioner (paragraph 24), which raises it to £1,886 gross, or if in the case of a dispensing practitioner add a half, which brings it to £2,122. If we take the mean and adopt £2,000 a year gross instead of £1,800, the capitation fee works out at 15s.

I have not worked out the equivalent for an officer of the army, and there are points in the above calculation —for example, value of pension—which I have hastily assumed, but it is enough, I think, to show that the £1,800 a year wants further examination.

In conclusion, I submit that in this matter of remuneration, as in all negotiations as to pay, the right course to adopt would be to come to an agreement with the Government as to the principles on which the sum is to be assessed, and then refer the actual calculations to an expert committee with an independent chairman.—I am, etc.,

J. P. Williams-Freeman.

Weyhill, Oct. 28th.

Sir,—I wish through the columns of the Journal to lay before the profession a very definite plan of campaign with the object of securing an adequate "capitation rate" for our services under the National Insurance Acts, based upon the figures contained in my letter in your issue of October 25th.

To recapitulate the figures:

1. A capitation rate of 16s. to be paid to each panel practitioner for each patient on his list as from January 1st, 1920, as long as the cost of living is more than 100 per cent. higher than it was in 1914.

2. A capitation rate of 14s. 10d. while the cost of living is more than 75 per cent. higher than it was in 1914 but not more than 100 per cent. higher.

3. A capitation rate of 13s. 8d. while the cost of living is over 50 per cent. higher than it was in 1914.

4. A minimum capitation rate of 12s. 6d. when the cost of living comes down to a figure 50 per cent. higher than it was in 1914.

The range of services should be those outlined in M.25 as subsequently modified at the Annual Representative Meeting and Panel Conference, with perhaps a few alterations which could in all probability be easily adjusted. Personally I am in favour of the insurance work being made complete and thoroughly efficient, but no scheme,

however perfect in other respects, can be efficient so long as there is a sense of inadequate payment left in the minds of the practitioners working it. If the country wants a good service it must be prepared to pay for it.

How shall we proceed to get it? I suggest as follows:

(1) Let each panel practitioner, whether a member of the Association or not, write to the secretary of the Division of the British Medical Association in whose area he resides a letter on he following lines:

> I hereby express my complete agreement with the capitation rates for insurance patients outlined by Dr. Crawshaw in the issues of the British Medical Journal for October 25th and November 1st, 1919, and hereby undertake to support any steps which may be deemed necessary by a majority of panel practitioners to make these rates effective.
>
> Date. (Signed).....

The matter is one of considerable urgency and importance, and I appeal to every practitioner concerned to send this letter *within the next week*. I am positive we shall get no better terms, and it rests with us to say that these shall be our minimum. In this way by November 8th the secretaries of the Divisions should know how many will support the scheme in their respective Divisions.

(2) In the week following November 8th each secretary of a Division should make a return to the Medical Secretary of the Association of the number agreeing and the percentage that number bears to the total number in his Division.

(3) In the following week each secretary of a Division should call a general meeting of his area to confirm the proceedings so far, and pass a resolution pledging the Division as a whole and each practitioner individually to stand out for the scheme. Copies of those resolutions should be sent to the Medical Secretary of the Association.

(4) The Medical Secretary should see that the figures are published in the next succeeding issue of the Journal and lay them before the Council, who should then take the necessary steps, if the returns justify it, to lay the matter before the Government. This could perhaps be done best by the Insurance Acts Committee, but I would leave the selection of the method to the Council.

(5) If the Government accept the terms the matter is at an end. But we must be prepared for their non-acceptance, and then the matter must be referred to the Divisions, when I would suggest the vote should be some form of ballot. The results of the Divisional voting should come before a Special Representative Meeting of the Association, which should remain in session until a final agreement is arrived at, and appoint a special committee from among its members to act as an intermediary with the Government. It might be necessary to "strike" before the terms are accepted, and I should be prepared to go to this extreme.

In this scheme I have deliberately passed the Panel Committees by, as I am convinced they are too unwieldy, and not representative of the profession. The proper unit to work through is the unit of our own organization, not a Government-made committee.

As regards a "strike," it is an extreme step which I should regret to see necessary, but it would simply be an absolute refusal to work under the insurance system, not a refusal to attend the sick They should be given to understand that after December 31st next they would have to pay privately for their attendance.

This scheme is definite, and so far as I know the only one before the profession, and to every member thereof it seems to me it should be acceptable. I appeal strongly to every practitioner to take the necessary initial step, and get a move on.—I am, etc.,

Ashton-under-Lyne, Oct. 27th. Saml. Crawshaw.

1920 REGULATIONS AND REMUNERATION.

Sir,—As the Insurance Acts Committee approve generally the draft regulations we may take it for granted that before long we shall be working under those regulations. I should like to express an opinion or two before it is too late.

Every leader of medical thought who has either written or spoken on the present crisis in our profession has emphasized the necessity of liberty and freedom in the carrying on of our work. Yet I notice that one of our most cherished liberties is soon to go. I mean our right to choose or refuse patients.

> It shall be the duty of a practitioner who refuses to accept on his list a person who applies for treatment as an insured person (*a*) to give the applicant such treatment, if any, as may be required by him, pending his acceptance by or assignment to a practitioner, and (*b*) to inform him of the name and address of any neighbouring practitioner or practitioners to whom application for acceptance might be made, and to hand him a form, to be supplied by the committee, for the purpose of enabling him if necessary to secure assignment to a practitioner.

This is not all.

> It shall be the duty of any practitioner who may be summoned and may be available to give the insured person any necessary treatment.

I trust the Conference will have the sense to oppose this. We are here consenting to do the work which up to now has been done by the clerk to the committee.

If a practitioner is responsible for all acts and omissions of his deputy or assistant, why should he be compelled to inform the Insurance Committee of any arrangement he has made for securing treatment for his patients when he is not available and must be absent from his practice for more than one week, without first informing the Insurance Committee of the fact and of the person or persons who will be responsible for his insurance practice during his absence? We have here an agreement without a consideration, which in common law would be void. We are told plainly that our responsible person is not responsible. This sort of contradiction is not uncommon in official regulations.

There should be no artificial limitation of patients on the lists of doctors. It is a thoroughly discredited fallacy that if a man did less work there was more work for others to do. The only natural and rational way to accomplish this is to entice into the service able men who "possess professional skill or psychological characteristics" that attract patients to them.

A word about emergency work. A man who does good solid conscientious work cannot go in for emergency work. If he keeps to his prescribed hours at his own home and visits his patients at reasonably fixed hours emergency work becomes impossible. To give to insured persons the care, thought, and time which the Act demands one cannot in the midst of work run off because another insurance patient has a fit. Emergency work is incompatible with contract work, and no rules and regulations can make it otherwise. Emergency work should be done in public institutions with a good ambulance service and an adequate staff.

Granted that the whole of a practitioner's time is (or should be) at the disposal of his patients, and the conditions of the insurance contract really constitute a prior claim for such persons on the whole of his time; that a doctor has to be on the alert from "Sunday midnight to Sunday midnight"—why, then, should his working hours for payment purposes be calculated at eight hours a day?

I do sincerely hope that the Conference will insist on Sir Bertrand Dawson's four postulates*:—

(*a*) Team work and organized equipment.
(*b*) Means for the general practitioner to help himself.
(*c*) Reform in remuneration such as justice demands.
(*d*) Liberty of action.

—I am, etc.,

Exeter, Oct. 27th. J. Pereira Gray.

INSURANCE NEGOTIATIONS WITH GOVERNMENT.

Sir,—That negotiators without a weapon are on that account at a disadvantage when dealing with politicians who are striving to drive as good a bargain as possible is evident; it is equally evident that our weapon cannot be a strike, involving a suspension of medical attendance, as it would hit the Government only through the suffering of the sick. We possess, however, a weapon which, if called into action, would hit the Government in a tender place—finance—and in such a way that neither the sick nor the public need suffer.

Let all panel practitioners formally repudiate any words in their agreements which bind them to sign "intermediate" and "final" certificates, and agree that they will unanimously cease to sign these unless their just demands are honestly met. Such action would not be a strike in the "down tools" sense, and would inflict no hardship upon the sick, who would be duly certified for sick pay by the "first" certificate, and would continue uninterruptedly to receive medical attendance; moreover, it is for financial, not medical, purposes that we are expected thus to protect the Government against imposition.

* Cavendish Lecture, July 4th, 1918

The movement should, I think, be organized by panel practitioners as distinct from the British Medical Association, but they should work with the Association in the matter, so that the profession as a whole would not be involved in a conflict, and yet the hands of those on whom the responsibility of negotiation falls would be provided with a weapon which could be called into use if found necessary.—I am, etc.,

Eastbourne, Oct. 23rd. ARTHUR P. SHERWOOD.

A BITTER CRY FROM IRELAND.

SIR,—Before it is too late, will you allow me, through the medium of your columns, to address a few words to my fellow practitioners in Ireland? Having only a more or less direct personal interest in the matter, I may perhaps make my suggestions without being suspect of having an axe to grind.

The medical profession in Ireland is now at the parting of the ways. A false step will lead to disaster, but it has still, not through any merit or foresight on its part, an opportunity such as will never recur if it acts collectively and with promptitude.

The Government, having successfully established the fact that medical attendance on chronic invalids—that is, discharged disabled sailors and soldiers—*plus* the supplying of medicines, dressings, ordinary splints, etc., *plus* a considerable amount of clerical work, is only worthy of pay at varying rates of from 12s. 6d. to 15s. a year, is now preparing to lay a snare, not, alas! "in vain in the sight of the bird," but stealthily and with many and specious promises and arguments, before a profession which prefers to emulate the ostrich to seeing after its own interests.

This snare is euphemistically termed "extension of medical benefits," or "a State medical service," or "reform of the Poor Law," or any other claptrap which past experience has taught will entrap the unwary.

A maximum of 15s. per annum for medical attendance, etc., on chronic invalids having been established, the Government will naturally argue that a much smaller sum is adequate remuneration for attendance on the healthy, and if we as a profession do not bestir ourselves, we shall find we are offered and—do not let us make any mistake in the matter—practically compelled to accept an annual sum for unceasing work equal to a part of what many of the so-called working men receive for a day of from seven to ten hours' work.

I put it to the general practitioner, Is he satisfied to be the only worker whose status is not improved and whose emoluments are not increased? I put it to the specialist and consultant, Are they content to be perpetually exploited by the well-to-do artisans, farmers, shopkeepers, etc., who frequent hospitals for free medical attendance, while denying themselves no amusement or gratification they can by any means reach to?

I shall perhaps be told that my feeble criticism is merely destructive, that all will be well if we only remain inactive and await with patience the maturing of a plan designed by a beneficent and sympathetic Government. Let us remember the words of Edward Fitzgerald: "To-day which has outlasted so many to-morrows."

No doubt I shall be asked for a scheme not open to criticism. The remedy lies with ourselves, and I believe I can suggest one which, while maintaining our independence as a profession, will improve our status, increase our emoluments, and provide the public with a just and efficient service.

Briefly, my scheme consists in our providing a medical service managed by ourselves in which no lay person shall have any voice except as our paid servant. I see no insuperable difficulties in preparing and working a plan of this sort, the benefits of which would of course be open only to those unable to pay ordinary fees.

We have lately had established a new General Committee to represent the entire profession in Ireland. What is to prevent this being the Central Governing Body? We have already in existence local medical committees all over the country. What better functions can they have than carrying out of the scheme in their own locality? Probably I shall be told I am a visionary. Perhaps I am, but it is the vision of the abyss into which the medical profession in Ireland is in danger of falling that prompts me to put my pen to paper.

No doubt many arguments will be advanced against a scheme which provides for liberty of action in the profession, and which makes it possible for us to say on what conditions and for what remuneration we will give our labour. I shall be told that the profession is not organized or united. Granted, but what greater incentive to unity can there be than mutual monetary benefit? Under such a scheme as I suggest tens of thousands of pounds would be annually divided among members of our profession—general practitioners, consultants, specialists—not one penny of which now reaches our pockets.

Again, I shall be told that we have not the intellectual capacity or business acumen for managing anything. I freely admit that we come under Swift's category of those not fitted to be a "clerk to an apple stall," but we can *pay* laymen to do our non-professional work for us. Then, again, it will be urged "Let us wait and see what the Government scheme is before we do anything." Yes, by all means, let us try to insure our house when nothing but ashes remain!

Seriously, Sir, what does any man who considers the matter dispassionately imagine will happen once the Government launch a scheme for the enslavement of the medical profession under the specious title of State Service? Will there not be murmurings, meetings, threats of a general strike, and so forth; and in the end will not the profession accept whatever garbage in the way of remuneration they are offered? Meetings and murmurings are futile. The public is sick of strikes. At best a strike is but a negative policy, and can only be brought to a successful issue by a thoroughly organized and united body of men.

Is there any reason why the medical profession should not adopt a positive and constructive policy which will not only assure its own liberty and economic position, but will at the same time provide those members of the public who cannot afford to pay ordinary fees with an efficient voluntary medical service?—I am, etc.,

Waterford, Oct. 10th. J. W. H. JELLETT.

INFLUENZA.

SIR,—Let me remind your readers that there is a very remarkable feature—far more significant than that of *S. viridans*—in the symbiosis of Pfeiffer's bacillus and *Staphylococcus pyogenes*. The prolific growth of influenza bacilli around colonies of staphylococci, and also in areas where dead staphylococci have been streaked upon the plate culture, shows that the soluble products of staphylococci favour the growth of the influenza bacilli. Surely this is likely to be a more fertile source of knowledge than the experiments with *S. viridans*.—I am, etc.,

London, W., Oct. 25th. W. CAMAC WILKINSON.

*** The suggestion was intended to be of general application; *S. viridans* was taken only as an example.

"THE CULT OF INDIVIDUALISM."

SIR,—Before replying generally on the correspondence under this heading which you have been good enough to allow in your JOURNAL, it would be useful to refer to replies by officers of the Federation of Medical and Allied Societies and the Medico-Political Union, whose activities outside the British Medical Association are greatly to be deplored.

With regard to the Medico-Political Union. In your issues for September 27th and again for October 11th a certain question was submitted to Dr. Macdonald (York), the protagonist for that body—namely, how he would propose, by using trade union methods or principles, to compel certain practitioners in a town, who are considered by the British Medical Association to be recalcitrant, to resign their appointments if the Medico-Political Union determined that this should be done. Up to the present no reply is forthcoming. No one need be surprised. There is no power available either for that body or any other. This silence has always been the result when an advocate of this Union is eventually tied down to show cause for the faith which is within him whilst avoiding rhetoric and prophecy. It can be taken, therefore, that the individualism shown—with the consequent schism—by this body is proved, however much one may admire and sympathize with the honestly-believed-in endeavours of its active members.

With regard to the British Federation of Medical and Allied Societies the position is more serious. The individualism and schism there shown is based on inaccurate and misleading published statements, and when the officers are asked to give concisely what object they propose to advocate which the British Medical Association neither can nor has the power to carry into effect, they own that their "particular piece of work" is not one which the British Medical Association cannot carry into effect, nor do they seek any power to accomplish it. That being so, why form an incorporated association under Board of Trade registration before finding out whether the British Medical Association was doing that work? Had such an inquiry been made it would have been found that the British Medical Association began that "particular piece of work" in 1914, and was only delayed in its fulfilment by the war. At the public meeting of the profession in London in the spring, when asked to hand over its political interests to the Parliamentary Committee those present refused to do so, hence the necessity for the change of name and machinery. But it is "the old gang." Rumour states, moreover, that it has been engineered into life by a political party. The inaccurate and misleading statements published are that certain "medical bodies have joined this Federation," when, as a fact, certain quoted societies did join the Parliamentary Committee but have never joined the Federation, whilst others were represented at the July conference to hear and report what was said, but they have never as yet notified their allegiance. If the Federation conducts its future propaganda on such questionable lines, it will not only become a danger to the profession but also a discredit to it.

This is not the time—when health services are under consideration, not only for the nations of our empire, but also for the so-called "new world"—for the British medical profession anywhere to proceed to split itself into rival groupings. It is therefore the more to be deplored that not only societies which are collaborating now with the British Medical Association (for example, Association of Medical Officers of Health, Irish Medical Association, Royal Society of Medicine, Medical Women's Federation, Poor Law Medical Officers' Association, Central Committee for State Registration of Nurses, British Dental Association, etc.), but also honoured members of our profession (for example, Sir Malcolm Morris, Sir Ronald Ross, Mr. E. B. Turner, etc.), should allow themselves to be advertised as assisting a body whose birth is questionable, and whose activities, if successful, must tend to hamper the British Medical Association, and thus to defeat that union of the profession so necessary now to assist in the formation of a really satisfactory international medical service for the nations of the world brought together for the first time under the League of Nations. Is it too late to appeal to them to reconsider their position?

This cult of individualism in our profession—not only in the individual or group—may prove to be a national disaster. Surely the call is for each and all to be willing to place on one side, even what may be their individual strongest convictions, if by so doing they can assist to some extent toward the medical profession getting into line, rising to its opportunities, and so going forward in the second war—against disease—as one united whole.—I am, etc.,

Hove, Oct 27th. E. ROWLAND FOTHERGILL, M.B.

THE BRITISH FEDERATION OF MEDICAL AND ALLIED SOCIETIES.

SIR,—In his letter published in your issue of October 25th Sir Henry Morris has indeed dealt faithfully with his successors in the hierarchy of the British Federation of Medical and Allied Societies. He tells them that in answer to my original letter they gave "a somewhat distorted explanatory reply to the first charge, and no reply whatever to the second." The phrase, I confess, does seem to me to sum up the situation so far as the official defence of the Federation is concerned, and after such a judgement from such a source I, at least, may be content with the verdict. The officials themselves appear to accept the chastisement with becoming meekness, and I am sure that in any event their sense of politeness will restrain them from applying such terms as "carping" or "jealous" to their formidable mentor. Yet, if they desire to retort, they might remind Sir Henry Morris that he has closely followed their pattern in one respect, for he, too, avoids offering any defence of the activities cultivated by his committee outside the authoritative terms of reference; here obviously his formula, "no reply whatever," has a further field of opportunity. It is possible for a committee to sin by commission as well as by omission.

On the main facts of the controversy Sir Henry Morris confirms my statements. He agrees that the Steinway Hall committee pledged itself, on October 1st, 1918, to report to "a subsequent general meeting of the profession," and that its later action was a "deliberate departure" from this pledge. In his opinion, certain "unfavourable experiences" of general meetings of the profession justified this course, whereas my inclination is to the more primitive view that a promise once given and accepted is binding and must be fulfilled. Because they judged the atmosphere "unfavourable," the Steinway Hall committee departed from this elementary obligation. Yet, until I am assured to the contrary, I shall refuse to believe that any one of these gentlemen in the conduct of his private affairs would deign to avail himself of so dubious a retreat.

Sir Henry Morris agrees also that the chairman of the Steinway Hall committee undertook that his committee should not intervene in Scottish electoral affairs, and his limitation, "at any rate at the outset," whatever its other values, has no relevance to a discussion which is concerned with the earlier proceedings of the committee. Now, it is admitted that the committee placed on a list of approved candidates the name of a gentleman who was soliciting the suffrages of the electors in a Scottish constituency—namely, the constituency formed by the union, for parliamentary purposes, of the four Scottish universities. But, says Sir Henry Morris, in defending the committee against a charge of breach of engagement, "neither canvassing nor platform oratory was rendered by the committee in any university or other constituency in either Scotland or Ireland." If the committee is to be judged by this test its chance of acquittal is a slender one. I know nothing of canvassing, but it is certain that, in so far as abstinence from platform oratory goes, the position cannot be counted for virtue to the Steinway Hall committee, for this committee actually wrote to at least one candidate for the Scottish Universities constituency to offer the help of speakers in support of his candidature. The non-appearance of the oratory was thus due, not to the committee's respect for its chairman's pledge but solely to the modesty—or perhaps to the alarm—of the candidate.

Now, for myself, I say once and for all that an organization which (1) publishes in an approved list the name of a gentleman standing as a candidate for a Scottish constituency, and (2) offers this gentleman the co-operation of speakers in the prosecution of his candidature, does actually intervene in Scottish electoral affairs; and, further, that if this organization has previously pledged itself to abstain from action of this order, it has by such intervention been guilty of a breach of faith. If others, while admitting the facts, contest these conclusions, I can only assume that they, on the one hand, and myself on the other, apply different standards in our respective estimations of values.

On one point Sir Henry Morris is palpably in error. He writes: "The other candidate . . . to whom Dr. Hawthorne refers in his very reproachful and denunciatory criticism of the Committee was also a resident in London." My letter contains no such reference.—I am, etc.,

London, W., Oct. 27th. C. O. HAWTHORNE.

*** We cannot continue this correspondence.

THE Food Education Society (late National Food Reform Association) will hold a conference in Manchester next year, on the lines of the Guildhall School Conferences of 1912 and 1913. Steps are also being taken to constitute local committees in Birmingham and other places, so as to arouse interest in and secure adequate representation at the conference and to arrange for local campaigns.

MAJOR-GENERAL WILLIAM C. GORGAS, late Surgeon-General of the United States Army, who has been investigating sanitary conditions in Central and South America, has offered to assume the technical direction of the sanitation of Guayaquil, Ecuador, provided the necessary funds are supplied by the municipality or the Republic.

The Services.

ARMY OF OCCUPATION BONUS FOR MEDICAL WOMEN.

ON August 12th, 1919, an Army Council Instruction, No. 491 of 1919, was issued approving the issue of the Army of Occupation bonus to lady doctors attached to the R.A.M.C. serving on general service contracts (including those attached to Q.M.A.A.C., and those at Endell Street Military Hospital on full time duties) with effect from February 1st, 1919. Permission was given for the issue to be made automatically by the Command Paymaster, or by Messrs. Holt and Co., Army Agents; and steps were ordered to be taken to see that amounts due were issued to those already demobilized. A subsequent Army Council Instruction dated October 21st, No. 603, lays down the rates of the bonus for medical women as follows:

	Weekly. s.	d.
1. Lady doctors who have served on general service contracts for less than one year	28	0
2. Lady doctors who have served on general service contracts for periods in excess of one year	31	6
3. The Controllers of Medical Services Q.M.A.A.C. overseas and at home	35	0
4. Lady doctors serving as full time medical officers at Endell Street Military Hospital should be paid the bonus of the rank for which they are drawing pay.		

HONOURS.

THE following distinctions have been conferred for services rendered in connexion with the defence of Kut-al-Amarah:

C.M.G.

Lieut.-Colonel John Hennessy, C.B., R.A.M.C.

D.S.O.

Major Charles Harrison Barber, I.M.S., Captain (acting Major) Arthur Skelding Cane, O.B.E., R.A.M.C., Captain Edward Geoffrey S. Cane, R.A.M.C.

Military Cross.

Captain John Startin, R.A.M.C.

The following officers should be added to the list of mentions in dispatches published in the *London Gazette* of October 19th, 1916 (BRITISH MEDICAL JOURNAL, 1916, vol. ii, p. 601): Major E. A. Walker, I.M.S., Captain P. B. Bharucha, I.M.S., Captain (acting Major) A. T. J. McCreery, M.C., R.A.M.C., Captain L. Murphy, R.A.M.C.

ORDER OF THE BRITISH EMPIRE.

The following appointments to the Order of the British Empire are announced:

To be Officer (Military Division).

Surgeon Lieutenant Commander Lidbrooke Frank Cope, R.N., for valuable services with the Danube Naval Brigade.

To be Member (Military Division).

Surgeon Sublieutenant David James Tosh Oswald, R.N.V.R., for valuable services during the war.

FOREIGN DECORATIONS.

The following decorations and medals have been awarded by the Allied Powers for distinguished services rendered during the course of the campaign:

Conferred by the President of the French Republic.

Légion d'Honneur.—Officier: Major-General Edward George Browne, C.B., C.M.G., late R.A.M.C. Chevalier: Captain and Brevet Major Thomas J. Carey Evans, M.C., I.M.S.

Conferred by the King of Italy.

Bronze Medal for Military Valour.—Temporary Captain George Thomson Mowat, R.A.M.C.

Conferred by the King of the Belgians.

Croix de Guerre.—Surgeon Lieutenant Walter G. Bigger, D.S.C., R.N.

Conferred by the King of the Hellenes.

Order of the Redeemer.—Officer: Major Alexander Edward Kidd, O.B.E., R.A.M.C.(T.F.). Chevalier: Captains Archibald Oliver, R.A.M.C.(T.F.), and William Arthur Valentine, R.A.M.C.(T.F.).

Conferred by the President of the Portuguese Republic.

Military Order of Avis.—Commander: Colonel Murray MacLaren, C.M.G., C.A.M.C.; temporary Colonel Charles Ferdinand Martin, C.A.M.C.; temporary Major and brevet Lieut.-Colonel Frederick S. Brereton, C.B.E., R.A.M.C.

Conferred by the King of Serbia.

Order of St. Sava (5th Class).—Captain J. K. Mossman, M.C. C.A.M.C.

MILITARY CROSS.

The following are the statements of services for which the decorations announced in the *London Gazette* of March 8th, 1919, were conferred (continued from p. 482):

Temporary Captain St. George Marriott Leslie Homan, R.A.M.C., attached 1/8th Battalion Notts and Derby Regiment (T.F.).

On September 29th, 1918, during the attack on Bellenglise, he worked in an indefatigable manner, tending wounded in open trenches under heavy shell fire showing disregard for personal danger, and moving his aid post from time to time to be on the spot. Again, at the attack on Ramicourt and Montbrehain, on October 23rd, he worked incessantly for twenty-four hours, tending to casualties from every battalion in the division, and, although badly gassed, he refused to relinquish his excellent work.

Temporary Captain George Jackson, R.A.M.C., attached 15th Battalion Notts and Derby Regiment.

During operations on October 14th, 1918, east of Terhand, he displayed great courage and devotion to duty in attending the wounded under close artillery and machine-gun fire. Throughout the whole day he was with the foremost wave of the battalion, and several times traversed the front line and dressed the wounded. Later, in Sweveghem, he again performed invaluable service in attending the wounded, and thereby saved many lives.

Captain Frederick McNab Johnson, C.A.M.C., attached No. 2 Field Ambulance.

For conspicuous gallantry and devotion to duty. During the attack by the division on September 27th, 28th, and 29th, 1918, in front of the Canal du Nord, he was unremitting in his attention to wounded. Especially on September 29th he worked continuously under fire, locating and dressing wounded who were lying out and superintending carrying parties.

Captain Arthur Poole Lawrence, 6th Field Ambulance, A.A.M.C.

He displayed great gallantry and able leadership on October 3rd, 4th, and 5th, 1918, during the fighting in the Hindenburg Line north of St. Quentin, particularly during the assault on Montbrehain, as bearer captain. He maintained touch with regimental aid posts in spite of heavy shell fire, and his genius for selecting routes and loading posts resulted in a very rapid evacuation of wounded.

Temporary Captain Henry Ruthven Lawrence, 1st Field Ambulance, S.A.M.C.

For conspicuous gallantry and devotion during operations before Beaurevoir and Le Cateau, between October 7th and 15th, 1918, whilst in charge of the collection and evacuation of wounded. On the 7th his organization and energy were admirable, and from early morning on October 8th to the evening of the 9th he worked without rest, and the successful and expeditious evacuation of the wounded was due in a large measure to his tireless energy, resource, and disregard of danger.

Captain Gladstone Wilfred Lougheed, 4th Field Ambulance, C.A.M.C.

In charge of stretcher-bearers during the operations north and east of Cambrai, October 9th to 12th, 1918, he displayed great energy and fearless devotion to duty. Particularly on October 10th to 11th, he worked continuously for forty-eight hours without rest. He time after time led his bearers to forward positions under severe shell fire, and was responsible for the rapid evacuation of the wounded from the field.

Temporary Captain Robert Chichester McMillan, R.A.M.C., attached 38th Battalion Machine Gun Corps.

For conspicuous gallantry and devotion to duty. On November 8th, 1918, at advanced dressing station, Pot de Vin, he dressed and evacuated a large number of wounded continuously for twenty hours. For four hours of this period the enemy heavily shelled the advanced dressing station, one shell entering the building where he was attending the wounded, blowing out one of the walls.

Captain Allan Young McNair, C.A.M.C., attached 10th Infantry Battalion Alberta Regiment.

For conspicuous gallantry and devotion to duty east of Haynecourt on September 27th to 28th, 1918. He worked unceasingly for forty-eight hours in very exposed positions and under heavy fire. At one time he went forward and brought back a wounded officer who was lying out in front. His energy and fine behaviour throughout saved many lives.

Temporary Captain Malcolm Manson, R.A.M.C., attached 10th Battalion Royal West Surrey Regiment.

For conspicuous gallantry and devotion to duty near Menin on October 14th, 1918. He went forward in the fog under heavy shell and rifle fire and established an aid post, and continued dressing wounded under heavy shell fire at 1,000 yards' range quite regardless of his own personal safety. He showed marked coolness and courage throughout the whole operations.

Lieutenant Will George Frederick Owen-Morris, R.A.M.C. (S.R.), attached 2nd Battalion Leinster Regiment.

For conspicuous gallantry and devotion to duty on October 14th, 1918, near Ledeghem. Seeing a man fall wounded, he turned back, and for over half an hour remained working in a shell and bullet swept zone without any cover, attending to this man and others before himself moving to a pill-box a short distance away.

Captain (acting Major) Harry Priest Rudolf, R.A.M.C.

At Fife Knoll, near Kh. Abu Felah, Egypt, on September 18th–19th, 1918, he remained out all night, under a heavy bombardment, attending the numerous wounded. Again, on September 20th, he was indefatigable in his efforts, under shell and rifle fire, to collect the wounded. His gallant personal example cheered and encouraged not only the stretcher-bearers, but all ranks with whom he came in contact.

Temporary Captain (acting Major) Robert Bryson Rutherford, 91st Field Ambulance, R.A.M.C., attached 6th Division.

For conspicuous gallantry and devotion to duty during the night October 8th–9th, 1918. On hearing that a congestion of stretcher cases had occurred at the regimental aid post of the left brigade east of Montbrehain, he at once organized a party of bearers and dressers and proceeded in ambulance cars as far as the roads would allow. He then got in touch with the regimental medical officers, and under heavy shell fire organized the collection, dressing, and removal of the wounded to a place of safety.

Lieutenant Sohan Lall Bhatia, I.M.S., attached Infantry, I.A.

Near Sabieh, Egypt, on September 19th, 1918, for conspicuous gallantry under intense fire. The enemy put down a heavy barrage where he had established his aid post. In the midst of this he carried out his work with an absolute disregard of his personal safety. The skilful way the wounded were dressed by him, in spite of the adverse conditions, afterwards elicited the admiration of the medical officers in the dressing stations.

Lieutenant (temporary Captain and acting Major) Gerald Evan Spicer, 107th Field Ambulance, R.A.M.C.

He was in charge of a detachment of bearers during the operations around Moorseele from October 14th to 17th, 1918. He worked unremittingly throughout, establishing posts for the collection of wounded and going up to the regimental aid posts, and on occasions forward of these posts, frequently under heavy shell and machine-gun fire. Owing to his gallantry and tireless devotion to duty the wounded were rapidly and successfully evacuated.

Temporary Captain Frederick Reginald Sturridge, R.A.M.C., attached 2nd Royal Scots Fusiliers.

From the commencement of the advance east of Ypres to Vichte he displayed great courage and devotion to duty. On the night of October 13th–14th, 1918, at Slypscappelle when the enemy put down a heavy barrage and caught two companies in the open, causing a large number of casualties, he immediately rushed his stretcher bearers forward and established his aid post where the casualties had occurred, in spite of the fact that it was in the open, and that the enemy was still shelling heavily. Throughout he behaved admirably.

Temporary Captain (acting Major) Christopher Sullivan, 75th Field Ambulance, R.A.M.C.

He was in charge of the advanced dressing station during the action at Beaurevoir on October 5th, 1918, when over 300 cases were passed through his post. He was very short-handed, but by his personal courage and devotion to duty he animated all ranks and successfully evacuated the wounded under very heavy shell fire

Temporary Captain Edward Cowper Tamplin, R.A.M.C., attached 9th Battalion Scottish Rifles.

During continuous operations east of Ypres, from September 28th to October 26th, 1918, he has carried out his duties with conspicuous success as battalion medical officer. He has never failed to get all wounded expeditiously evacuated, frequently under heavy fire. His fearless devotion to duty has been an inspiring example to all who have worked with him.

Captain James Thompson, R.A.M.C., attached 2nd Battalion Bedfordshire Regiment.

During the operations near Preux-au-Bois, on November 4th, 1918, he showed great coolness and devotion to duty in attending to wounded under heavy machine-gun and shell fire. Entirely disregarding his own personal safety, he moved about among the wounded, attending to men of all units, and by his untiring energy he was instrumental in saving many lives. He has always set a very fine example to stretcher-bearers and others working under him.

Temporary Captain William Tudhope, 17th Field Ambulance, R.A.M.C.

For conspicuous gallantry and devotion to duty near St. Quentin on September 14th–19th, 1918. He was in charge of a section of bearers and brought them up under very heavy shell and machine-gun fire. He got in touch with the battalion and cleared their wounded soon after zero hour. He continued throughout the whole day and following night to supervise the evacuation of the wounded until this was accomplished.

Temporary Captain (acting Major) Alexander Wilmot Uloth, 132nd Field Ambulance, R.A.M.C.

He showed great gallantry and untiring devotion to duty whilst in command of bearers during the operations from September 29th to October 1st, 1918, near Bellicourt. At a very critical period, and when casualties were heavy, he successfully organized relay posts and led a party of bearers during the night of September 29th–30th to a position in the line whence he was able to carry out an immediate evacuation of the wounded.

Temporary Captain Robert William Lessel Wallace, R.A.M.C., attached 9th Battalion East Surrey Regiment.

For great gallantry as regimental medical officer On the night of October 8th–9th, 1918, when the enemy counter-attacked at Niergnies during a relief he remained out during the night in what had then become "No Man's Land" tending the wounded after most of his staff had become casualties. Again, on October 16th, when his aid post received several direct hits, he carried on his work where best he could in close proximity to the enemy. Thanks to his fine devotion to duty throughout, a large proportion of wounded were brought in.

Captain Rene Edward Amos Weston, C.A.M.C., attached 2nd Canadian Field Ambulance.

For conspicuous gallantry and devotion to duty. On the morning of September 27th, 1918, near Bourlon Wood, he came into a heavy barrage in order to dress the wounded. This is only one of several examples of the manner in which he performed his duty. His absolute disregard of personal safety is admirable.

Captain (acting Major) Michael White, No. 1 Field Ambulance, R.A.M.C.

For conspicuous gallantry and devotion to duty when in command of brigade stretcher-bearers on October 17th–18th, 1918, near La Vallee Mullatre. Undeterred by enemy fire he kept in close touch with the battalions, frequently visited their aid posts, and maintained the steady and rapid evacuation of all casualties. His coolness and resource inspired his men, and his skilful leading undoubtedly saved many lives.

Captain Henry Parks Whitworth, R.A.M.C.(S.R.), attached 6th Battalion King's Own Scottish Borderers.

For marked gallantry and devotion to duty near Cuerne on October 16th–17th, 1918. In spite of heavy shell fire he showed utter disregard of his personal safety in tending the wounded. Twice his aid post was hit by a shell, but he carried on and performed most valuable work in dressing the wounded until he was seriously wounded.

Captain Edward Albert Woodward, 8th Field Ambulance, A.A.M.C., attached 29th Battalion Australian Infantry.

At Bellicourt during September 29th–30th, 1918, with his regimental aid post, in an open trench under heavy shell and machine-gun fire, he carried on day and night dressing and attended the wounded. He showed a total disregard of danger and untiring devotion to duty under the most trying conditions, working without rest for forty-eight hours.

The following are the correct names and designations of the officers mentioned, and not as printed in the *London Gazette* of the dates indicated: August 22nd—Surgeon Lieutenant Commander (acting Surgeon Commander) Arthur Douglas Cowburn, R.N.V.R., Surgeon Lieutenant William Wilson Rorke, R.N., Surgeon Lieutenant Alexander Elder Saunderson, R.N.; September 16th—Surgeon Commander Percy H. Boyden, R.N.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THEODORE WILLIAMS scholarships in human anatomy and in physiology have been awarded to J. H. Fletcher and T. C. T. K. Cross respectively.

UNIVERSITY OF LONDON.

PHYSIOLOGICAL LABORATORY.

DR. A. D. WALLER, F.R.S., professor of physiology in the University, began his course of advanced lectures on physiology on October 29th. The lectures, which are being given in the Physiological Laboratory of the University, South Kensington, and not as previously advertised, deal (*a*) with the energy balance of the human body, (*b*) electrical signs of emotive phenomena. The lectures are delivered on Wednesdays at 5 p.m.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Honorary Fellowship.

THE important work performed by the medical forces of the navy and army in the recent war, and its share in bringing about the victorious result, is not always fully realized. To carry on a great war not only a wise commander-in-chief, an able general staff, and a brave army is needed; but an efficient medical staff well organized is also essential if the troops are to be kept in health and condition to respond to the demands made upon them by their generals. Never in the history of war have the medical branches of the forces of the empire attained to such a high standard of efficiency as they have during the war of 1914–18. This is due not only to magnificent organization by the heads of those departments, but also to the courage, ability, resource and devotion to duty of the whole personnel, and no praise is too high for their work.

Recognizing these facts the Royal College of Surgeons of Edinburgh, on October 15th, unanimously resolved, on the motion of the President, Dr. R. McKenzie Johnston, that the following names, representative of all the branches of the Medical Services, be added to the Roll of its Honorary Fellows, for distinguished services in the great war.

Sir William Norman, K.C.B., R.N., late Director-General Naval Medical Department.

Sir Robert Hill, K.C.M.G., C.B., C.V.O., Director-General Naval Medical Department.

Lieutenant-General Sir T. H. John Goodwin, K.C.B., C.M.G., D.S.O., K.H.S., Director-General Army Medical Department.

The Honourable Major-General William Rice Edwards, C.B., C.M.G., K.H.P., M.D., Director-General Indian Medical Service.

Major-General G. L. Foster, C.B., Director-General Medical Services Overseas Military Forces of Canada.

Major-General Sir N. R. Howse, V.C., K.C.B., Director Australian Army Medical Service.

Colonel W. H. Parkes, C.M.G., C.B.E., Director New Zealand Medical Corps.

Colonel P. G. Stock, C.B., Director South African Medical Corps.

Rear Admiral W. C. Braisted, U.S.N., Administrative Head of the Medical Service of the United States Navy.

Surgeon-General M. W. Ireland, United States Army Medical Corps.

Médecin Inspecteur-Général Sieur, Professor of the Val-de-Grâce Military Hospital.

Lieutenant-General Leopold Melis, K.C.B., Inspecteur-Général du Service de Santé de l'Armée Belge.

Maggiore Generale Commendatore Lorenzo Buonomo, of the Ispettorato di Sanita Militare, Rome.

Surgeon-Director-General Professor Tadao Honda, Director-General Naval Medical Service (Japan).

In referring in suitable terms to the personal career of each, the President pointed out that the honorary Fellowship was very rarely awarded. Prior to the 400th year from the foundation of the College only about thirty-four honorary Fellows had been created, while in the last fourteen years one addition had been made in the person of Lord Rosebery on the occasion of his opening the new hall and museum extension. He hoped those now admitted as honorary Fellows would accept the award as an honour, just as the College felt honoured by the addition of their names to the roll.

It had been arranged that the installation should be made at a public meeting, to be followed by a banquet to the honorary Fellows. Much to the regret of the college and many others, the railway strike caused so many difficulties in the arrangements that the public functions had to be dispensed with.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—J. B. W. Telford, H. Jennings, M. Sidawi, T. F. Minford, T. R. Sinclair, I. R. Macphail, J. A. A. Duncan, G. C. Field, J. T. Dier, J. R. Larson, L. Rifkind, Mandayam Anandampillay Parthasarathy Iyengar, W. G. Wilson, G. Beveridge, N. J. Patterson, G Ll. Stanley, A. H. B. Hudson, D. A. Diaz.

D.P.H.—C. R. Merrillees, C. M. G. Elliott, P. M. Tolmie, Martha L. Hamilton, R. J. M. Horne, R. N. McKinstry, T. B. Gilchrist, J. J. Galbraith, J. E. Allan, R. C. Robertson, W. A. Lethem, Annie M. Madin.

Obituary.

ARTHUR NEVE, F.R.C.S.EDIN.,

Surgeon, Kashmir Mission Hospital.

WE regret to record that Mr. Arthur Neve died at Srinagar, Kashmir, on September 5th. He was born at Brighton in 1858, and was educated at Brighton Grammar School and in Edinburgh. He took the diplomas of L.R.C.P. and S.Edinburgh in 1880, and that of F.R.C.S. Edinburgh in 1884. After serving as house-surgeon to the Livingstone Memorial Dispensary of the Edinburgh Medical Missionary Society he was appointed to the Kashmir Mission Hospital of the Church Missionary Society, and went out to India in 1882 to be assistant to the late Dr. Edmund Downes, whom he succeeded in charge of the Srinagar Medical Mission towards the end of that year. For thirty-seven years Mr. Arthur Neve was head of the hospital, working in association with his brother, Dr. Ernest Neve.

Arthur Neve won a great reputation in India as a bold, skilful, and successful surgeon. In 1901 he was awarded the Kaisar-i-Hind gold medal; in 1909 he was vice-president of the International Medical Congress, Bombay, and from 1910–12 president of the Indian Medical Missionary Association.

When off duty, in his few holidays, his favourite relaxation was mountaineering in the Himalayas, and in 1911 he received the Back award of the Royal Geographical Society. He was the author of a *Guidebook to Kashmir and the Northern Himalayas*, which has reached its tenth edition, of *Picturesque Kashmir*, and of *Thirty Years in Kashmir*, 1913. Soon after the beginning of the war he volunteered for service, and on April 8th, 1915, received a temporary commission as major in the R.A.M.C. He served as surgical specialist successively in the Kitchener Indian hospital at Brighton, in the Dartford war hospital, and finally in France, and was mentioned for good service by the Secretary of State. After the armistice he returned to his work in Srinagar, where, in addition to his regular hospital work, he was superintendent of the State Leper Asylum. The Maharaja of Kashmir ordered a public funeral, the guard being furnished by the Kashmir Imperial Service Infantry and by the 3rd Punjabis. The mourners included all classes, races, and many different religions, who united to pay a tribute of true respect to a well-beloved and disinterested friend who had done so much for Kashmir and its people.

SURGEON-GENERAL CHARLES JAMES, R.N.

IT is certain that throughout all ranks in the navy many and sincere will be the regrets caused by the death of Surgeon-General Charles James, R.N., which recently took place after operation in a nursing home in London. He joined the Naval Medical Service in 1877 and served with distinction in all its ranks. He retired a few years ago on completion of the full period of service as surgeon-general of the Western Naval Command, including the R.N. Hospital, Plymouth.

Charles James from start to finish was devoted to his profession, of which he had profound and ripe knowledge ever at the service of humanity, and, above all, of the British sailor, who was to him "the salt of the earth and the salt of the sea." His Cornish ancestry and boyhood's days had bitten into him, body and soul, a love of the sea and all that therein is, which persisted from the cradle to the grave. He was a most lovable and warm-hearted man. A gentleman to his finger tips, he lived up to high ideals. He was absolutely unselfish, "upright-down-straight" in all his dealings, and ever ready to help a lame dog over the thorny places of life's rough way. He loved his fellow beings and was one of those glad souls whose mission it is to bring sunshine wherever they go and so make others happy.

He leaves behind a widow and daughter, and a blank in a home of remarkable happiness which can never be filled, but the memories of which to those who knew will "ever smell sweet and blossom in the dust." While many to-day sorrow for his loss, it is certain no one has an unkind word to say of him.

JOHN THOMAS TIBBLES, M.R.C.S., L.S.A.,

Melton Mowbray.

WE regret to announce the death, on September 18th, of Dr. John T. Tibbles of Melton Mowbray, at the age of 64 years. He was born at Leicester and educated at Charing Cross Hospital Medical School. He settled in Melton Mowbray early in the eighties and entered fully into the social, philanthropic, and political life of the town. He was very popular as a medical man, and his practice had a wide range. He was parochial medical officer for the district of Asfordby, and public vaccinator for Melton Mowbray and Asfordby parishes. He was connected as a surgeon with Holwell iron smelting works from the time of their construction. He entered fully into the practitioner's side of medical politics and worked strenuously to bring the health insurance scheme within the range of practical politics. His zeal was rewarded by his election as chairman of the Leicestershire Panel Committee. He was a member of the Leicester Medical Society and of the British Medical Association; he had been chairman of the Leicester Division and vice-president of the Midland Branch. He was a fluent speaker and keen debater, and this ability raised him in the esteem of his fellow practitioners and townsmen who elected him Town Warden. In addition to his professional and other engagements, he was a Fellow of the Royal Meteorological Society, and for twenty years made observations on the climatic conditions of Melton Mowbray, which were recorded by the society and utilized in various reports. He was a victim of overwork during the war, but his zeal was such that he knew no rest until sickness laid him aside; he bore a long illness of eighteen months with exemplary patience and fortitude. He leaves a widow and eight children; one son served as captain in the R.A.M.C. during the war, and two daughters are nurses.

SURGEON-GENERAL DAVID SINCLAIR, C.S.I., Madras Medical Service (retired), died in Edinburgh on October 11th. He was the second son of the late William Sinclair of Peterculter, was born on January 26th, 1847, and educated at Aberdeen Grammar School and at the university in that city, where he graduated M.B. and C.M. in 1869. He entered the I.M.S. as assistant surgeon in that year. He became surgeon-general on October 11th, 1899, and retired on November 15th, 1904. Previous to his promotion to be head of the Madras Medical Service in 1899 all his service had been spent in Burma, where he held the post for many years of inspector-general of prisons, and finally that of inspector-general of civil hospitals. He received the C.S.I. on December 31st, 1898.

LIEUT.-COLONEL THOMAS JACKSON, Bombay Medical Service, died on leave at Melbourne, on October 16th, of heart failure, aged 54. He was born on January 18th, 1865, educated at Queen's College, Cork, and graduated as M.B., B.Ch., and B.A.O. in the Royal University of Ireland in 1890. He entered the I.M.S. on July 27th, 1892. After six years' military duty, he took civil employment as superintendent of Haiderabad Central Gaol, in Sind, in March, 1898, was appointed resident surgeon of St. George's Hospital, Bombay, and professor in the Grant Medical College, Bombay, in April, 1901, and, after acting as medical officer of Kathiawar Political Agency from June, 1906, to March, 1910, became surgeon superintendent and physician of St. George's Hospital. He served in the Sudan in 1896 in the Dongola expedition, receiving the British and Egyptian medals; and in the North-West Frontier of India campaign of 1897–98, gaining the Frontier medal with two clasps.

Medical News.

THE tablets in memory of Lord Lister, executed for University College by Professor Harvard Thomas, will be unveiled on Tuesday, November 11th, by Sir George Makins, President of the Royal College of Surgeons, and Sir J. J. Thomson, President of the Royal Society. The Duke of Bedford, President of the Lister Memorial Committee, will take the chair at 5 p.m.

THE Bradshaw Lecture before the Royal College of Physicians will be given on Thursday, November 6th, by Dr. A. P. Beddard, who has chosen the subject of chronic arthritis. The FitzPatrick Lectures will be given by Dr. Edgar G. Browne on November 11th and 13th. The subject is the origin and development of Arabian medicine.

MEMBERS who desire to receive regularly the half-yearly Indexes of the JOURNAL, SUPPLEMENT, and EPITOME are invited to send a request to that effect to the Financial Secretary and Business Manager, 429, Strand, London, W.C.2.

THE postponed annual dinner of past and present students of Charing Cross Hospital will take place at Gatti's Restaurant, on Wednesday, November 19th, at 7.30.

THE annual dinner of the staff and past and present students of the Royal Dental Hospital of London will be held on November 22nd at the Connaught Rooms. This is the first dinner since the war began. Particulars can be obtained from the Dean, Mr. W. H. Dolamore. It is hoped that Mrs. Lloyd George will unveil the roll of honour and distribute the prizes on Wednesday next, November 5th, at 5 p.m.

THE Medico-Legal Society held a successful dinner on Wednesday evening, October 29th, at the Holborn Restaurant, London, with the President, Mr. R. Henslowe Wellington, in the chair. The speakers included Mr. Samuel Osborn, F.R.C.S. (Master of the Society of Apothecaries), Sir William Collins, Master Watkin-Williams, Mr. J. A. Foote, K.C. (Chairman of the Bar Council), Dr. F. G. Crookshank, and the President.

A MEETING in support of the candidature of Professor Bolam, Dr. Macdonald, Mr. Turner, and Sir Jenner Verrall for election to the General Medical Council has been arranged by the Council of the Metropolitan Counties Branch of the British Medical Association. It will be held in St. James's Vestry Hall, Piccadilly, on Thursday next, November 6th, from 4 to 6 p.m.

DR. JOHN HEDLEY CROCKER has resigned the post of medical officer of health for Richmond, Surrey, which he has held for the last nineteen years.

A COURSE of lectures on housing problems and town planning in relation to public health is being given at the Royal Institute of Public Health, 37, Russell Square, W.C. The first lecture was delivered by Professor E. W. Hope, M.O.H. Liverpool, on October 29th. Subsequent lectures will be given on succeeding Wednesdays at 4 p.m.

MR. BONAR LAW was, on October 25th, elected Lord Rector of Glasgow University by 1,073 votes, against 726 given to Professor Gilbert Murray and 80 to the Socialist candidate, the Hon. Bertrand Russell.

SIR HENRY ALEXANDER MIERS, D.Sc., F.R.S., Vice-Chancellor of the University of Manchester, has been appointed a member of the Advisory Council to the Committee of the Privy Council for Scientific and Industrial Research.

DR. WILLIAM HENRY WHITEHOUSE, barrister-at-law, M.O.H. for Deptford, has been appointed coroner for the south-eastern district of London.

THE Ministry of Health has asked county councils to allow county medical officers to investigate any matter touching housing and report directly to the Housing Commissioner. The London Council, while agreeing that the Ministry should have the benefit of the medical advice at the Council's disposal, decided that any request for information should be made to the Council, and that any report by the medical officer should be made to the appropriate committee.

THE s.s. *Nagoya* arrived at the Port of London on October 25th with eight cases of plague on board. The vessel is being disinfected.

A RECENT Army Council Instruction provides that an officer who requires an artificial limb may either obtain it under Article 647 of the Pay Warrant, or be provided with it at one of the special fitting hospitals—namely, the Queen Mary's Hospital, Roehampton; the 5th London T.F. Hospital (St. Thomas's Hospital, S.E.); Prince of Wales's Hospital, Cardiff; the Edenhall Limbless Hospital, Musselburgh (out-patients only); or the Ulster Volunteer Force Hospital, Belfast.

LAST January, at a conference called by the Presidents of the Royal Society and of the British Academy, and attended by representatives of many other bodies, it was resolved to establish a monthly popular journal of the progress of knowledge. A trust for its maintenance has been formed, and Mr. A. S. Russell, D.Sc., Reader-elect in Chemistry, Christ Church, Oxford, has been appointed editor. The first number of the new journal, which will be called *Discovery*, will be published by Mr. John Murray on January 15th, 1920, at the price of 6d. An editorial advisory council has been formed and a list of suitable writers on topics for 1920 selected.

THE London Jewish Hospital at Stepney Green, opened on October 26th by Lord Rothschild, has been founded almost entirely by small sums given by the Jews in the West End largely in the form of contributions of one penny a week, beginning in 1907. The site was acquired in 1909 and the building started in 1914. Work was suspended during the war, but was resumed last July, and it is now proposed to complete the front part of the hospital, which will have sixty beds, at an estimated cost of £50,000. Mr. Kiley, M.P. for Whitechapel, said that though it would be known as the Jewish Hospital qualification for admission would be neither race nor class, but need.

THE usual monthly meeting of the Executive Committee of the Medical Sickness Society was held on October 17th, when Mr. E. Bartlett, vice-chairman, presided in the absence of Dr. F. J. Allan. The secretary's report referred to the greater necessity of cover during incapacity of any kind owing to the high charges for locums. It was stated that, whereas £3 3s. to £4 4s. a week was the usual fee ten years ago, such sums as £8 8s. and £10 10s. a week were now quite common; the society's rates of premium were the same now as in 1884. The results of the new table for sickness and accident for women practitioners has been satisfactory and proposals were still being received. The sickness claims continued to be under the expectation, but there had been a slight increase in the number of influenza cases during the last few weeks. A new form of proposal and medical examination was approved. Prospectus and all particulars to be obtained from Mr. Bertram Sutton, F.C.I.I., Secretary, 300, High Holborn, W.C.1.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

INCOME TAX.

"A. B. C." inquires whether it is correct that his son should be assessed to income tax on a salary paid to him, as assistant, by "A. B. C." while "A. B. C." himself is not allowed to deduct that salary for the purpose of his own assessment.

*** "A. B. C." is assessable on his average earnings over the past three years, when he was apparently not paying the salary in question; and he cannot deduct from that average any special expense of the current year, even though it may take the form of a salary assessable on some other person. But at the end of the current year he may be entitled to an adjustment of the present assessment, because if he can then show that his *total actual* income is less by more than 10 per

cent. than the total income on which he has been assessed or charged, he will be entitled to repayment of tax on the difference, or to an allowance against any tax that may then be outstanding.

LOCAL ANAESTHESIA FOR PILES.

A. H. G. asks for directions for local anaesthesia for the removal of piles.

*** A 5 per cent. solution of novocain or 1 per cent. eucaine with adrenalin 1 in 10,000 should be injected in the papillary layer of the skin at the junction of skin and mucous membrane. This is best done through a curved hypodermic needle inserted posteriorly and carried round anteriorly successively on each side, and the solution injected as the needle is withdrawn. Through a straight needle the solution should be injected into the submucous tissue of those piles which are to be removed. A more lasting anaesthesia is obtained by urea and quinine hydrochloride, but with this there is a risk of sloughing.

PAIN IN ARTHRITIS OF SPINE.

DR. T. GERALD GARRY (Cairo) writes: I would advise "Spes" (BRITISH MEDICAL JOURNAL, September 20th, p. 404) to send his patient, if he can afford it, to Bad Pöstyén, now Pistany, as it is incorporated in the new Czecho-Slovak Republic. Information concerning the *natural* mud baths can be had in London from Messrs. Gould and Portmans.

LETTERS, NOTES, ETC.

INFLUENZA.

THE Ministry of Health has issued the following statement, dated October 25th, with regard to influenza:

"During the last few weeks there has been in the ninety-six great towns of England and Wales a slight but gradual increase in the number of deaths attributed to influenza and a coincident rise in the number of notifications of acute primary and acute influenzal pneumonia. The increase appears to have been associated with prevailing meteorological conditions, and does not apparently signify more than the usual variation in catarrhal and lung diseases generally which may be expected at this season of the year. Whilst the possibility of a fresh outbreak of influenza cannot be excluded, the data available do not at present afford any indication of an immediate recrudescence of the disease in epidemic form."

It may be added that the deaths from influenza reported by the Registrar-General in the ninety-six great towns numbered 14 in the week ending September 20th, 20 in the following week, 32 in the next, 39 in the next, 67 in the next, and 71 in the week ending October 25th. In London the deaths from this cause numbered 20 in the week ending October 25th, as against 4, 11, 16, and 18 in the preceding four weeks.

CHOLESTERIN IN A PERICARDIAL EFFUSION.

DR. J. S. ALEXANDER (University College Hospital, London) writes: A specimen of the cholesterin pericardial effusion the details of which were published in the JOURNAL of October 11th, 1919, p. 463, was sent to M. Adrien Grigaut of Paris, and he has found the cholesterin content per litre to be 0.61 gram, and draws attention to the fact that the spangled appearance is due rather to conditions of solubility than to actual concentration of cholesterin.

SCHOOLBOYS' WEIGHT.

DR. J. F. L. WHITTINGDALE, School Medical Officer, Sherborne, writes: An examination of the following figures of the weights of boys at Sherborne School, where it is the custom to weigh all at the beginning and end of each term, tends to show that the majority gain weight during the term, but that this is dependent on the season of the year. Taking the last three terms, the figures are as follows:

October term, 1918: 81.3 per cent. gained, 9.1 per cent. stationary, 9.6 per cent. lost.

Lent term, 1919: 72.3 per cent. gained, 13.2 per cent. stationary, 10.5 per cent. lost.

Summer term, 1919: 53.9 per cent. gained, 9.7 per cent. stationary, 36.3 per cent. lost.

The amount of loss was only one or two pounds. It is usual for spare boys to gain and the stout ones to lose, as the result of hard exercise.

SUGAR AND BUTTER.

DR. GORDON WARD (Sevenoaks) sends the following extract from a letter received from the Director of Rationing and Distribution of the Ministry of Food. He considers it a concise and easily remembered rule.

"In the case of applicants for sugar, grants are restricted to applicants who are certified to be for some reason or other unable to take solid food.

"In the case of butter, grants are restricted to applicants who cannot take margarine or who urgently require animal fats and are not able to take these in any other forms than butter."

WATER FOR WASHING CARS.

THE Automobile Association informs us that a number of cases have been reported to it in which unauthorized charges have been made for water used for washing cars; where it has had an opportunity of taking the matter up with the authorities the item has been deleted from the water rate notices. The opinion of the Automobile Association is that, in the absence of any special powers giving authority for such charges, the supply of water to private individuals for washing motor cars comes within the supply for domestic purposes, and in these circumstances no extra charge can legally be made.

INFANT WELFARE.

AT a meeting of the National Baby Week Council on October 21st the following resolutions were adopted:

That it is the duty of all interested in infant welfare to use every effort to secure that the borough and district councils carry out as speedily as possible adequate housing schemes.

That, in view of the continuous and conclusive evidence that the measures of liquor control in this country since 1915 have directly saved the lives of very many infants and have been of indirect service in various ways to motherhood and infancy, it is imperative in the interests of the race that some effective control should be permanently maintained.

THE PUFF DIRECT.

THE best authority tells us that puffing is of various sorts. We have seen many examples of "the puff direct," but never one more exuberant than is contained in a cutting, recently sent to us, from a weekly paper published in a part of these islands which we will not specify because we prefer to think that the article was inspired by a friend unacquainted with medical traditions. For the same reason in the extracts that follow we suppress the names of people and places.

The article before us is headed "New Health Officer," and is illustrated with a portrait. It frankly professes to tell the life story of Dr. A. The county favoured by his birth "is well known for its proverbial upbringing of its own doctors." Hence a feeling of local pride suggests that "in appointing Dr. A. to the important post of district medical officer and public vaccinator for B., the board of guardians did honour to themselves by electing one who is a typical [native] to his fingers' tips." Details of Dr. A.'s parentage and upbringing follow, his student career being neatly divided into the periods of elementary, secondary, and professional education. After being told about his diplomas and the resident appointments he held, we are informed that he joined the R.A.M.C. and served in France for twelve months, 1917–18, but was gassed and returned to England. "In April, 1918, he came to B., entering into partnership with the veteran surgeon, Dr. E., where he still resides, faithfully attending to the ailments of town and countryside residents." Some local appointments are then mentioned, and it is stated that "his wide experience will be a valuable asset in treating medical, surgical, and obstetric cases." Then follows the statement that, "The most unassuming of men, Dr. A. enters upon the important duties of his offices with the best wishes of his wide circle of friends, and coming out of a family traditional for its love of music and religion, he will not devote what spare moments he has to anything but the culture and development of his native country." The article concludes with a few particulars about its subject's brothers.

The exceeding ingenuousness of all this disarms our criticism, but we would hope that the "New Health Officer" will be more successful in checking disease than he has shown himself in moderating the raptures of his friends.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 38, 42, 43, 44, and 45 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 39, 40, and 41.

THE following vacant appointments of certifying factory surgeons are announced: Darwen (Lancs), Gatehouse (Kirkcudbright), Grassington (Yorks, West Riding), Kinsale (Cork), Oban (Argyll).

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